The Hunterian Lectures
ON
INFANTILE SYPHILIS.

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LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—In the first place I have to acknowledge my indebtedness to the Council of this College for allowing me to occupy this present position. I feel, however, that I can best fulfil the trust imposed on me by not elaborating this acknowledgment, but by proceeding at once to the subject with which I have to deal.

That syphilis can be transmitted from parents to offspring few will have the hardihood to deny at the present day. Long after the recognition of the symptoms of inherited syphilis in the infant, however, there would seem to have been a minority of observers who doubted this transmission. Hunter, it is well known, was induced to deny it; but in this College we may fairly claim for the great Scotch surgeon that with him "error was but opinion in the making." During his lifetime and for years after his death his teaching was widely accepted and believed in. Further experience and knowledge, and especially the works of Colles, had shown that much of Hunter's writing on venereal disease was erroneous, and I fancied that, with the refutation of this mistake, the non-belief in the parental transmission of syphilis had been universally abandoned. It was then with surprise that I learnt from Kassowitz that in 1875, more than three centuries after the general acceptation of the fact of hereditary syphilis in the infant, there were still "authorities" who doubted this transmission. As late, indeed, as 1882 Hermann of Vienna published a work in which he endeavoured to prove that the assumption of such a complaint as hereditary syphilis was entirely a fallacy. Considering the recent date of this work, and having regard to the manifest differences between the inherited and acquired complaints, it needs but slight powers of prophesy to foretell that other "authorities" will in the future come forward to support Hermann and their predecessors in Kassowitz's time in the denial as to the identity of the disease in parent and infant. It is easy to predict, moreover, that the grounds of their unbelief as to the hereditary form of syphilis will be based on the theory that the latter is a germ disease, and that what is really transmitted from parent to offspring is not the living germ itself, but merely a toxine or some other product resulting from it. But in the light of our present knowledge doubts as to the transmission to the infant are not within the range of practical controversy, and if there still lingers any smouldering scepticism as to this transmission it is of little import, and I feel I can fairly ignore it without further comment.

I assume then as proven the fact that syphilis can be transmitted from a parent to the infant. I feel I may also take as proven that syphilis in the infant can be derived from the complaint in the father alone or the mother alone, or may be a joint heritage from parents who are both affected. It is true that within comparatively recent times authorities have doubted the power of the father to transmit except through the previous contamination of the mother, and others who have doubted the pregnancy resulting from a tainted ovum proceeding as far as the birth of a living child. Proofs in abundance, however, are forthcoming where, the father alone being infected, the mother has borne a syphilitic infant without presenting the least sign of the complaint herself, and others where a syphilitic mother has produced a tainted infant and the father undoubtedly been free. Any attempt, then, to refute the views of those who have argued otherwise would be superfluous on my part, and I will proceed to attempt an investigation as to whether there are any differences in the frequency and severity with which the infant is affected dependent on the parental source from which the complaint is derived. Apart from the consideration of disturbing elements introduced by such factors as the length of time elapsed from primary infection and the amount of treatment, there are other inherent difficulties in the way of estimating the paternal influence as regards the frequency of transmission of syphilis and its severity in the infant. One such difficulty lies in the fact that the mother may possibly have been affected in the ordinary manner, although she may exhibit no signs of the disease, and then it becomes a matter of impossibility to rightly assign to either parent his or her due share in the production of the complaint. Another difficulty arises from the assumption that every mother bearing a syphilitic infant has herself contracted the complaint from the fœtus in utero—a contingency that will be considered later when dealing with the question of "syphilis by conception." On one point bearing on the paternal influence, however, all observers are agreed. This is that a very large proportion of the mothers of syphilitic infants exhibit no outward evidences of the complaint themselves even after prolonged and careful search. It is only in such cases as these that any estimation as to the paternal influence in syphilitic heredity can be attempted. When writers such as Fournier, who believe in the doctrine of "syphilis by conception," give statistics as to the paternal influence, they simply refer, I take it, to cases where there is certain proof of the disease in the father and where there is an entire absence of the ordinary signs of it in the mother. Fournier's statistics as to the paternal influence, subject to the reservation I have stated, are as follows. From notes of 1127 pregnancies in his private practice where the father alone was manifestly syphilitic he places the mortality amongst infected children at 28 per cent. In his hospital practice, from notes collected by Mademoiselle Krikus, he places the mortality where the father alone was syphilitic at as high a figure as 48 per cent., an increase fully accounted for by the difference of surroundings of the parents in private and hospital practices. Kassowitz, who denies the doctrine of syphilis by conception, gives the following figures: out of 105 pregnancies where the father was syphilitic there were 26 abortions, 21 children who died early, and 58 who survived. This gives a percentage of mortality of 26·5, a result closely in accord with Fournier's record from private cases. I have collected notes from my out-patient practice at Shadwell of 100 families where the mother presented no signs of syphilis and the disease in the infant was presumably derived from the father alone, and a similar number where the mother was unmistakably syphilitic. They are, of course, subject to the disadvantages attaching to notes gathered from patients actually brought for inherited syphilis, and that they refer to infants born at widely differing periods from the times of primary infection. Subject as they are to these sources of vitiation, they are still not without interest. In the first set, where the mother was apparently free from syphilis, there had been 563 pregnancies, resulting in 187 abortions, 193 children who died early, and 183 children still living. This gives the high mortality of 56·6 per cent., but poverty and other factors are probably as much responsible for it as syphilis when dealing with East-end babies. But the mortality amongst affected infants by no means adequately gauges the evils of syphilis on the offspring. Its responsibility for death of the fœtus in utero and the harm wrought by it in infants who survive must also be taken into account in this respect. Fournier, reckoning up the number of abortions and the number of infants attacked by inherited syphilis, and comparing their sum with the total number of pregnancies, has deduced what he terms "indices of harmfulness" (*nocivité*) for parental syphilis. This "index of harmfulness" when the father alone is syphilitic he places at .37 per cent. But a true "index of harmfulness" is only to be arrived at by following out the whole of the child-begetting histories of numerous syphilitics; an opportunity, however, for doing this is never likely to fall to any one observer. Were it possible to gain such statistics I cannot but think that Fournier's "indices of harmfulness" would be materially lowered.

The marked effect of time in decreasing and annulling the power of the father to transmit cannot be gainsaid. But it is difficult or rather impossible to give any definite limit of time beyond which this power of transmission is entirely lost. Mr. Hutchinson is probably right in the main in limiting the time during which the father can infect the mother at five years from the date of his own infection and also in his statement that such an eventuality is rare even after the

lapse of only three years. That the power of infecting the offspring, however, may long outlast that of directly infecting the mother cannot be doubted. Kassowitz from his own experience would give the limit of time during which transmission to the offspring is possible at from ten to fourteen years after primary infection, and he also propounds the important aphorism that if there is even a remote chance of the mother being contaminated in such a case inheritance by her offspring is a certainty. That the power of transmission can be retained by the father for a longer period than that assigned by Kassowitz is sufficiently proven. Henoch quotes a case from his own experience where syphilis in the infant was due to disease contracted by the parent more than twenty years before. Dr. George Ogilvie has published a case in which amongst other interesting facts was the one that nineteen pregnancies, spread over nineteen years from the date of infection of the father, all resulted in syphilitic infants or abortions, and this in spite of prolonged and vigorous treatment. Dr. Colcott Fox mentioned at a meeting of the Royal Medical and Chirurgical Society that he had known a case where the transmission from parent to infant took place more than twenty years after primary infection. Dr. Eustace Smith, too, tells me of the following case. A man married fifteen years after contracting syphilis: his wife during the first five years of her married life had several abortions. Dr. Smith saw the first living child, born more than twenty years after the contraction of the disease by the father, and it was deeply syphilitic although the mother was apparently a strictly healthy woman. I have personally known a case where the fourteenth pregnancy, sixteen years after the incurrence of syphilis, resulted in a tainted infant. Happily, such cases of long retention of the power of transmission are rare. In very exceptional instances, however, it might well be, judging from the cases given, that the power of transmission is only limited by the child-bearing or child-begetting capacities on the part of the parents.

That time alone, independently of any treatment, may abolish the capability of the father to transmit is undeniable. Before finally annulling the power of transmission lapse of time engenders the quality of rendering transmission less certain. When this stage is reached at which transmission is uncertain though possible it becomes a mere matter for surmise what determines the infection of the infant in one case and freedom from it in another. That such infection is dependent upon any fresh outbreak of symptoms in the father is not proven. All the same, I should consider the father more likely to transmit the disease at a time when he had outward manifestations of the complaint than he would at a time when all symptoms are latent. At whatever period of the disease the father transmits, if he transmits at all, he probably does so with the same intensity as he would do at the beginning of his syphilis when transmission was almost certain. The case of an infant in this respect is identical with that of a woman. When a man late in his syphilis, having reached the stage at which transmission is uncertain, contaminates a woman, there is no proof that such a woman acquires a milder form of the disease than she would have acquired at a time when his syphilis was recent and transference certain. In other words, there is no proof that lapse of time brings with it attenuation of the virus. And so with regard to the infant. When a syphilitic man and a healthy woman bear a succession of infants I grant the gradual lessening of the severity of, and tendency to eradication of, the complaint in each succeeding infant. This diminution of the symptoms in successive infants by the same couple, where the father alone is syphilitic, is not, however, necessarily dependent on the assumption of any progressive increase of attenuation of the virus in the man. In fact, I believe that such lessening severity in the successive infants is independent of the father and due entirely to the presence of some product in the mother, this product being by her absorbed from the fœtus *in utero* and in amount proportional to the number of syphilitic conceptions she has carried. When a syphilitic man, by the same woman, has begotten a succession of infants in the latest of whom the syphilis has decreased to the vanishing point, we have no proof that, if he still retain the power of transmission, he would not in other women beget infants with syphilis as virulent as that in the initial conception by the first woman. Indeed, such slight evidence as we possess would tend to prove that he would. Plenty of cases are on record where men, many years after infection, have begotten infants with syphilis as virulent as in any born within a short period after the primary disease. Diday's law of decreases I hold to be true in the main, but only as regards infants from the same couple.

The effects of treatment in limiting the power of transmission are still more marked than those of time alone. But again we have no proofs where the man alone is affected that treatment any more than time can furnish an attenuated virus, and, however fully a man may have been treated, if he transmit at all he probably transmits in full to woman or infant. Obviously such a rule does not apply in the case of the woman, for the mercury taken by her may help to mitigate the disease of the fœtus *in utero*. What would seem remarkable about mercury is not its power of attenuating the virus transmitted, but its power of temporarily preventing transmission altogether, and especially if it be administered about the times of procreation. A case recorded by Fournier is a striking example of this: "A young man, against the advice of the last-named, married in the first year of his syphilis, but continued his treatment. His wife conceived and bore him a healthy infant. Thinking by this latter fact that he was absolutely cured he left off his mercury; he then infected his wife, whose second pregnancy resulted in a deeply infected infant." Diday, too, quotes cases where by the administration or withholding of mercury healthy or infected infants were alternately produced. There is, however, a mathematical precision about some of these cases that makes them difficult of acceptation. All the writers, however, in dealing with this power of mercury describe the infants born under the conditions in question as "healthy" and not as merely suffering from a mitigated form of the disease.

Time and treatment are concerned in another question of great practical importance—viz., the date at which marriage should be sanctioned in a man after the incurrence of syphilis. A definite answer, applicable to all cases, is, I think, impossible and unadvisable. The age at which the disease was contracted, the varying degrees of severity of the symptoms, the amount of treatment and the lapse of time over which it has been spread, are all factors which must largely qualify the answer in every instance. As it may be of interest I will give the dates after primary infection at which some modern authorities consider a man is justified in marrying with a fair prospect of not transmitting the complaint to wife or offspring. Schuster of Aix-la-Chapelle, who has written a *brochure* on the subject, places the date at two years after primary infection. Mr. Hutchinson finds the same period, and says he has only once had to regret his sanction to marriage after this interval. This is, perhaps, more a tribute to the results of his treatment than a warrant of justification for others to follow his example in sanctioning marriage at so early a date. Mr. Hutchinson, however, is emphatic on the point. "Probably," he writes, "in the vast majority of cases the risk of transmission to children is over long before the end of two years." With this favourable view of the matter I cannot but think he will find many authorities to disagree. Mr. Cooper would allow marriage three years and Fournier and Otis four years after first infection. Kopp and Lesser would extend the time to as long as five years. Personally I am in most cases in favour of the longer interval. The responsibility of sanctioning a marriage with any risk of imparting syphilis to others is not to be lightly undertaken. Diday's sarcasm "that the extreme caution displayed by some authorities on the matter would soon depopulate the earth" I think can be ignored. If treatment has been thorough and delay of marriage in any way detrimental I would shorten the interval to one of two years after the disappearance of all active symptoms, or to one of three years after primary infection. In no case would I sanction marriage until at least three months after the disappearance of active symptoms, no matter how long a time had elapsed between their appearance and the incurrence of the complaint.

That syphilis in the mother can be transmitted to her infant when the father is healthy is now placed beyond all manner of cavil or doubt. It was the mother alone that Hunter accredited with the transmission of the complaint in the days whilst he yet believed in the reality of hereditary syphilis. As the father is the introducer of syphilis into the household in the vast majority of instances, it is somewhat difficult to meet cases of hereditary syphilis where there is a positive guarantee of the mother's sole responsibility for the transmission, and on this point I have to rely on the

statistics of others. Fournier has recorded the cases of 13 syphilitic women whose husbands were free, and 28 pregnancies in these women resulted as follows: 7 children living, 4 syphilitic; 15 infants died at birth or soon after; and 6 abortions. Fournier gives the percentage mortality amongst infants born alive of syphilitic mothers as 60, but it reaches as high as 68·1 if calculated from the figures last given. Kassowitz records the results from his own practice of 40 pregnancies where the mother alone was syphilitic and they gave 18 abortions, 5 children died early, and 17 living children. This gives a percentage mortality of only 22·7 as compared with Fournier's 60, but the percentage of abortions is incomparably higher in Kassowitz's figures than in Fournier's. Elsewhere, too, Kassowitz gives the mortality amongst syphilitic infants inheriting from the mother alone as 80 per cent. Fournier's index of harmfulness for maternal syphilis is 84 per cent.; but as he probably formed it on statistics drawn from mothers bearing infected infants, it is in all likelihood much too high if intended as applying to the whole community of infected mothers. Two other questions concerned with syphilis in the mother—the effect on her offspring of her contamination during pregnancy and "syphilis by conception"—I purpose dealing with later.

In attempting to estimate the influence of syphilis in both father and mother upon the offspring the disturbing elements of time and treatment have redoubled force, as here they have to be reckoned with in each parent instead of one only. Fournier, from statistics gathered under conditions as identical as the case permits of, places the mortality of infants where both parents are syphilitic at 68 per cent., as against 28 where the father alone and 60 where the mother alone is syphilitic. Kassowitz, out of 76 pregnancies where both parents were affected, found 28 abortions, 24 infants that died early, and 24 infants that survived, this giving a mortality of 50 per cent. The same author, however, in another series found the mortality as high as 69 per cent. From my notes of 100 families where the mother was syphilitic, and in the vast majority the father syphilitic also, I gather the following statistics. In these 100 families 539 pregnancies resulted in 189 abortions, 203 infants who died early, and 147 living children. This gives a mortality of exactly 58 per cent., a result not differing greatly from that obtaining in my cases where the father alone was affected. Fournier's index of harmfulness rises to 92 for the mixed type of inheritance. Statistics such as I have given as to the parental influences in transmission are subject to many faults and discrepancies. For a due and reliable estimation of these influences and their effect upon the progeny we want more detailed statistics than have as yet been furnished us. Thus, it would be of value if we had the results of pregnancies tabulated according to the number of years elapsing from the dates of primary infection. As an example of this Kassowitz gives the figures for 90 pregnancies of women contaminated by their husbands and conceiving in the first year of their syphilis and these resulted in 50 abortions, 38 infants who died early, and only 2 infants who survived. Further statistics of a like character and others giving details as to successive pregnancies independently of the times elapsed from infection might be of great practical utility and interest. Rough and imperfect as the statistics are that I have given, I think that they indubitably show that maternal syphilis is more deleterious as regards the offspring than a paternal one, and that the mixed type is the most serious of the three. The extra severity of the one type over the other, however, is, I believe, entirely exercised upon the fœtus *in utero* and has no influence after birth. The greater severity upon the fœtus of a maternal syphilis over a paternal one is due, probably, to the reason unusally assigned for it, the deleterious influence of the vitiated maternal fluids upon the fœtus *in utero*; and the slight increase in the mixed parental type over the maternal one is possibly owing to a greater certainty and frequency of transmission. Mr. Hutchinson writes: "There is no reason for believing that the infection from the mother (germ transmission) produces more serious results than sperm transmission or that the child who inherits from both parents suffers more severely than he would if one were free." Exceptions to this rule, he admits, occur in cases "in which children are born with syphilitic lesions actually present or with traces of intra-uterine disease." If I interpret these sentences correctly Mr. Hutchinson would seem to agree with me as to the extra severity of one form of inheritance over another being entirely exercised during intra-uterine existence. As a practical point, in any infant brought at the usual age for treatment I know of no facts that would justify any qualification of prognosis depending on the parental source from which its syphilis might be derived.

I turn now to a subject of practical importance and interest, the effect upon the fœtus of a syphilis contracted by a mother during her pregnancy. For many years one set of authorities strongly asserted that in this contingency the fœtus was usually infected and another set as strenuously denied it. Even at the present day, in fact, it cannot be claimed that the dispute is settled to the satisfaction of all, although the possibility of infection of the fœtus is commonly accepted. Diday, who is much quoted on the point, lays down the curious rule, and defends it on the anatomical relations of the placenta, that if a mother is infected during the first forty days or after the seventh month of her pregnancy the child will escape, but the latter will be syphilitic if the mother be infected in the interval between these times. Kassowitz justly asks, however, if a mother infected during the first forty days of her pregnancy is not syphilitic also in the interval during which Diday claims transmission is probable? Ricord writes: "If the infection of the mother takes place during the last three months it is not certain that transmission is possible." Mr. Hutchinson, again, doubts whether a woman would be likely to go to the end of her pregnancy who had suffered from constitutional syphilis in the early part of it. Most of the facts in his own personal knowledge occurred in cases in which the disease was incurred by the mother late in pregnancy. There is then great discrepancy amongst authorities as to the time during pregnancy when infection of the mother can occur with the production of a syphilitic infant. Fournier, who believes in the infection of the infant through a syphilis incurred by the mother during pregnancy, follows Cazenave and Diday in adopting the name of "congenital syphilis" for the type of complaint in the infant under these conditions, restricting that of "inherited syphilis" for the class of cases originating at times of conception. He, moreover, claims that the symptoms of this "congenital syphilis" are easily distinguishable from those of inherited syphilis. Mr. Hutchinson will not admit of any possible differentiation of symptoms in the two classes and throws the onus of proving any difference between them on those who assert it. There is then as great a contention amongst leading authorities as to the symptoms in the infant as there is regarding the times of pregnancy at which a mother can be infected with transmission to the infant. Kassowitz and other German authorities deny the transmission to the infant at whatever period of pregnancy a mother may be infected. There is no proof, Kassowitz argues, that in any one of the cases where a mother was infected during pregnancy and produced a syphilitic infant that such syphilis was not derived from the father at the time of conception. But if he admitted the possibility of the carrying of a syphilitic fœtus for several months in her uterus, and the subsequent contamination of the mother, Kassowitz in this way allowed the possibility of what is in reality an equivalent of a breach of the first part of Colles' law, a deduction from his belief that would seem to have escaped this astute observer. Personally, I have no experience in the matter; but in all the cases of this nature under the care of my friends the infants escaped. I have, moreover, met with twins born of a syphilitic mother where the one infant was deeply affected and the other apparently free, and I know of similar cases under my colleagues. This circumstance would seem to show that there is no imperative necessity for the inoculation of the fœtus by a syphilitic mother's blood, and also that infection of the fœtus is probably most often effected through the ovum. Henoch has never known a case of a mother contaminated during her pregnancy, but he deems transmission to the infant likely under such conditions. Birch Hirschfeld knew three instances where a mother was infected during pregnancy. The infants born from these pregnancies died soon after birth from some complaint other than syphilis, and the necropsies revealed no trace of the last disease, not even the characteristic changes so generally found in the epiphyseal cartilages. Birch Hirschfeld, nevertheless, believes that transmission is possible to the infant under the conditions in question, but that such transmission is not possible so long as the integrity of the endothelial barrier between the maternal and fœtal circulations is maintained. He claims to have proved that any affection of this endothelial barrier permitting of the passage of micro-organisms from the mother to the fœtus is secondary to serious vascular disease

in the maternal portion of the placenta. If his views are correct, then contamination of the fœtus under the conditions in question must be allowed as possible, but abortion or the entire escape of the fœtus would seem much the more probable event. When writers like Mr. Hutchinson and Fournier cite cases where the infant has inherited the disease incurred by its mother during her pregnancy, I take for granted that they have satisfied themselves as to the freedom of the father at the times of conception, and I accept the possibility of the transmission to the infant. Nevertheless, I believe that what is possible has unwittingly been exalted into what is probable. To thoroughly settle several of the points concerned in the question we want the publication of further cases giving details as to the freedom of the father at the time of conception, the date of infection of the mother in her pregnancy, and a full description of the symptoms in the child.

The converse of the preceding question, the effect upon the mother of the blood returned to her through the placenta from a syphilitic fœtus, may appropriately be taken here. This, amongst others, involves the much debated subject of "syphilis by conception." First prominently promulgated by Ricord and Diday, the doctrine of "syphilis by conception" has been alternately advanced and denied by every eminent writer on syphilis since their time. Some of the uncertainty and contention on the subject has undoubtedly arisen from a want of due appreciation of what is really implied by "syphilis by conception." It is not very uncommon to find the term used in connexion with the disease in the infant—a strange confusion of ideas. Under these circumstances I trust it will not be deemed superfluous if I define what is implied by the term. "Syphilis by conception" is the syphilis supposed to be acquired by a healthy mother by means of the tainted blood, returned to her through the placenta, from a syphilitic fœtus infected by the sperm of the father—a "syphilis by return shock," as Diday calls it. The term, of course, implies an escape of direct infection of the mother by the father, and that her syphilis is solely and entirely due to the fact of her conceiving. It is claimed by many eminent authorities that if a woman cohabit with a man incapable of directly contaminating her, but who is still capable of transmitting to the fœtus, such cohabitation may be harmless to the woman unless she conceives, but that this last condition of necessity leads to her impregnation with syphilis. More than this, the syphilis, such writers allege, which had lost much of its virulence in the man is merely from the fact of conception on the part of the woman regenerated in her with all its initial virulence—"*virus acquirit eundo*," as Diday quotes. Such are some of the principles underlying the theory of "syphilis by conception." It is a syphilis, its upholders claim, agreeing with one acquired in the ordinary way in all secondary manifestations and sequelæ, but nevertheless possessing certain characteristics peculiar to itself. Fournier, the most able advocate of the doctrine at the present day, has styled it a "syphilis decapitée," inasmuch as with it there is an entire absence of primary chancre and enlargement of the corresponding glands and the periods of primary and secondary incubations are abolished. For the establishment of "syphilis by conception" in any particular instance its upholders allow that proofs of the following essentials must be forthcoming: (1) That the father was free from any innoculable lesion at a time when the date of the mother's syphilis was consistent with direct acquirement from him; and (2) that the mother has always been free from any primary chancre and any enlargement of glands resulting from the presence of one. The first requisite for the establishment of "syphilis by conception," the absence of innoculable lesion in the father, is absolutely incapable of proof in any instance. It is impossible for any one of us to guarantee the freedom of any patient in this respect at all times and seasons. In many of the published cases, too, of syphilis by conception it is recorded that sores on the scalp, palmar psoriasis, and such like trifles were missed; and, this being so, how much more readily might a slight abrasion of the penis be passed over by a layman? Such a lesion might, moreover, be easily missed by a medical man even with ample opportunities of examining his patient. The history, then, of the freedom of the father from innoculable lesion is in no case a partial proof of the possibility of syphilis by conception.

The second requisite—the establishment of the absence of a primary chancre and enlargement of the corresponding glands in the mother—stands on an equally unsatisfactory basis as the preceding one. In a large number of syphilitic women who have never been pregnant the site of the primary lesion is impossible to locate. There are admitted difficulties in this respect applying to women that do not obtain in men. But even in men a careful observer like Mr. Hutchinson has to admit that "in not a few cases he has been unable to ascertain the original site of innoculation." The absence of proof, too, of any glandular enlargement is not conclusive of its non-existence or of that of a primary sore. When the latter is high in the vagina or on the cervix uteri the demonstration of enlargement of the corresponding glands may be physically impossible. How, then, can it ever be proven that the syphilis of a pregnant woman is acquired through the agency of conception when there are such insuperable difficulties in establishing her non-acquisition by the ordinary channels?

If we turn to the descriptions furnished by the upholders of the doctrine we find a marked discrepancy amongst them as regards the times of onset of the complaint after conception. Fournier would seemingly place the time at as early a date as three weeks after this latter. He gives the case of a young woman who developed syphilis soon after marriage and in whom he could find no primary chancre or trace of inoculable lesion in her husband. At the woman's monthly period, however, shortly preceding her syphilis the menstrual flow was attended with more pain and some firmer clotting than usual. Fournier gravely argues from this that, as there was no proof of primary contagion, this undue clotting and pain were owing to the expulsion of a three weeks' fœtus, and that the short sojourn of this last *in utero* was sufficient to account for a syphilis by conception in the mother. Most of us would, I fancy, however, find a less subtle explanation of such a syphilis. If Fournier is correct in his interpretation, and syphilis by conception can manifest itself after so short a period as three weeks after impregnation, then in other cases the pregnancy should never be far advanced before the appearance of symptoms. Diday, however, who is chiefly responsible for the doctrine of "syphilis by conception," suggests parturition, or shortly after, as the time at which symptoms of such a syphilis are most likely to appear. There is, then, seemingly a most marked disagreement amongst the upholders of the doctrine on one of its most vital points. Diday is, however, quite clear in his teaching as to the frequency of such a syphilis. "If a woman bear a syphilitic infant," he writes, "I say she has had the complaint herself." Fournier is equally emphatic. According to him, pregnancy with a tainted fœtus, however short a time it may last, implies the certain acquisition by a woman of "syphilis by conception." If there are none of the outward signs of syphilis in such a woman, then, according to Fournier, she has it in a latent form. As a proof of the reality of this last condition cases have been instanced where women have borne infected infants by syphilitic husbands, and although presenting no early symptoms of the disease themselves have in later years appeared with tertiary ones. That such cases do occur will be readily granted, but they are not restricted in occurrence to fertile women. Cases of sterile women, and of men also, in whom the presence of tertiary symptoms is accompanied by an absolutely negative history as regarded primary and secondary manifestations are far from rare. Charrier's case of this nature, quoted by Fournier, Messrs. Cooper and Cotterell, and others, is to me an ordinary one of a woman in whom, owing to the mildness of the secondary symptoms, the complaint had been missed until the supervention of gummata. Such cases, were they infinitely more common than they are, go but a slight way to prove the reality of "syphilis by conception," latent or manifest.

The preceding are not all the arguments that can be adduced against the theory of "syphilis by conception." Diday, as I have already stated, is generally credited with being the founder of the doctrine. Most of those, however, who have accepted his teaching on the point would seem to pass unnoticed the deductions he drew from it. This is what he terms the "law of increases," and it would seem to me a fairly logical outcome from the establishment of this "syphilis by conception." By this law, Diday asserts, every conception on the part of a woman by a syphilitic partner adds to her syphilis, and these additions tell in their turn upon the fœtus, and thus each succeeding pregnancy results in a product more syphilitic than the preceding one. The "law of decreases," the lessening severity upon the fœtus in each successive pregnancy, only applies, he asserts, to cases where the mother or both parents are affected. When

the father alone is affected, which applies to by far the greatest number of cases of inherited syphilis, this "law of increases" condemns each successive infant in a family as more syphilitic than the last—a dreadful state of things to contemplate if true. But fortunately, I think, all experience proves its falsity and that of the theory that gave it birth. It is repulsive enough that a woman should be compelled to bear syphilitic infants against her will. This repulsiveness would be vastly increased if "syphilis by conception" were proven and that such a woman could be tainted from her unborn infant. The one slight tittle of evidence in favour of the possibility of "syphilis by conception" is that afforded by Ricord and Diday, and Henoch quotes Fournier and Mr Hutchinson to the same effect, that they have known women to have lived long with syphilitic partners and escaped contamination as long as they remained sterile, but conception brought syphilis in its train. But cases such as these, where proof of infection by the ordinary methods is wanting, are not sufficient in number to free them from the class dependent on mere coincidence.

I have stated my disbelief in the theory of "syphilis by conception" and have given the reasons for that disbelief. The theory no doubt arose from the immunity to syphilis displayed by mothers bearing affected infants. That such mothers do enjoy immunity, partial or complete, would seem almost universally accepted at the present day. But immunity to syphilis by no means entails the necessity of having passed through an attack of the disease itself. In accordance with all modern teaching there is every justification for the supposition that syphilis is a disease dependent upon a specific micro-organism. It is true that hitherto attempts at identification and cultivation of the responsible organism have not met with a success universally acknowledged. Notwithstanding the failures, or perhaps partial successes, of Lustgarten, Klebs, and others, the prevalent opinion that syphilis is a germ disease has not been shaken. If, then, syphilis be a germ disease, the termination of an attack in the individual is brought about by the evolution by the germs themselves of some chemical principle antagonistic to their own growth and existence. By analogy with other complaints this chemical product is possibly an antitoxin, the syphilitic equivalent of that occurring in diphtheria. Now, if the syphilis in an infant, inherited from the father, is ever a contagious disease, this last of necessity implies the transference of active micro-organisms from the father to the fœtus. Once implanted in the fœtus, the evolution of these micro-organisms could be active ensue a as in extra-uterine life, and with their growth would *in utero* corresponding production of the "syphilitic antitoxin." Now the possibility of the passage of such a substance as this "antitoxin" into the maternal circulation no one would contest, although many would do that of the germs themselves, with the consequent syphilisation of the mother. Chauveau has recorded some observations with a close bearing on this point. He claims to have proved that when gravid sheep are inoculated with "symptomatic anthrax" the lambs they drop are immune to that complaint. This immunity, too, Chauveau states, is not due to the direct passage of the anthrax germs themselves to the lambs, but to that of some product generated in the mother and absorbed by her progeny by means of the placental vessels. In an exactly analogous manner to this last, although the direction of the stream is reversed, I would suggest that a mother may absorb the antitoxin from her syphilitic fœtus and so gain immunity for herself, partial or complete. In this way such a mother, without having incurred the actual complaint herself, may have gained the position of one who has passed through and recovered from an attack of syphilis. In this last deduction from the germ theory of syphilis I am seemingly supported by many. For a further deduction—a wild speculation it may be called—I fear I must charge myself with the sole responsibility. It has occurred to me that if the immunity in the mother has been gained by the absorption of some "antitoxin" from the fœtus, this substance may in its turn beneficially react upon the fœtus *in utero*. In the case of a first conception the absorption of the "antitoxin" by the mother, and its consequent diffusion through the two circulations, may be detrimental to the fœtus and to some extent explanatory of the more untoward results of first syphilitic pregnancies. But in succeeding pregnancies the mother's "antitoxin" would act upon the fœtus from the start and with much more marked effect. With each pregnancy the amount of antitoxin in the mother would be increased, and it may be that its accumulation would be sufficient to cure the disease in later conceptions, although all the time the father transmit in full. Such a theory would seem to me fairly explanatory of the extra severity of the complaint in the first infant in a family, the lessening severity in each successive infant, and the final disappearance of the complaint in the latest ones. It would also account for the greater severity *in utero* of a mixed parental or maternal syphilis over a paternal one. By the theory, too, the later infants in a syphilitic family, although presenting no signs of the complaint, should be immune to it, and possibly also the earlier infants by a second husband, who is free, of a woman who has borne infected infants by a former partner. In conclusion, I would suggest that if the serum treatment of syphilis is deemed worthy of further trial such serum should be taken from mothers who have borne affected infants and themselves remained free, rather than from persons broken down with tertiary symptoms.

The Lumleian Lectures

ON

THE SEQUELS OF DISEASES.

Delivered before the Royal College of Physicians of London

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LECTURE III.[1]

Delivered on March 26th.

MR. PRESIDENT AND GENTLEMEN.—The sequels of *Syphilis* are now amongst the best recognised disorders we have to deal with. Their variety, complexity, and far-reaching nature are well appreciated. Much light has been thrown upon them in the course of the last thirty years, and many labourers have worked in this field of pathology, not a few of whom have been our own countrymen. We may feel sure that a great variety of disorders depending on manifestations of syphilitic virus constituted difficult problems for solution to our predecessors, and, no less, enabled many of them to score remarkable successes in the days when mercurial treatment was so largely, and in an empirical routine fashion, in vogue. For the most part, it may be affirmed that the sequels of syphilis pertain to adult and middle life. I am reminded here of an axiomatic declaration of the older physicians related to me by our learned librarian Dr. Munk, to the effect that many of the mysterious and puzzling cases of disease occurring in early life generally depend upon tuberculous processes; those commonest in middle life upon syphilis; while those occuring in later periods are generally dependent upon gouty manifestations. In these days we do well to recall the wisdom and shrewdness of the great men who have preceded us, for we are rather apt to think that we have lighted our own torches, and to regard those handed on to us as but feeble and flickering links. Our modern electric illumination sometimes fails us, and we may be glad to fall back upon the older sources of light. We have to note as sequels some of the so-called secondary phases of syphilis, and may not only regard in this light such symptoms as appear after a period of apparent complete restoration to health in the form of late, or so-called tertiary, manifestations. These appear from one to two years after primary contagion and may recur any time within the life of the patient. Yet we can draw no hard and fast line between the end of the period in which secondary and that in which tertiary troubles may arise. Attention has recently been directed to the onset of grave nervous symptoms, such as paraplegia from transverse dorsal myelitis, general analgesia, anæsthesia, and acute multiple neuritis in patients at an early period after primary infection, at a time, that is, when secondary manifestations are most likely to occur. So, too, neuritis, affecting single nerves,

[1] Lectures I. and II. were delivered on March 19th and 24th respectively, and were published in THE LANCET of March 28th and April 4th.

may be an early occurrence. Syphilis, as a destroyer of arteries, may act in this fashion, with the production of grave symptoms within the first year of primary infection, at a period when only secondary manifestations are to be expected. Dr. Sharkey has recorded a case in which death occurred from disease of the cerebral arteries in the seventh month of syphilis while a secondary eruption was still present on the body. The late Dr. Bristowe recorded a like case in which death occurred from obstructive endarteritis, cerebral softening, and meningitis six months after the occurrence of the primary chancre, while secondary scaly syphilides were still present on the skin. The importance of a due recognition of these facts is great in respect of prompt and adequate treatment, since early lesions of this character are distinctly more amenable to the influence of mercury than are those which arise in the later or tertiary stage, and they are prone to begin slowly and to prove both chronic and rebellious under any treatment. These early sequels pertaining to the secondary or constitutionally active period of the disease are apt to develop rapidly, with serious disturbance of the general health. They are often productive of symmetrical lesions, and they quickly subside on appropriate treatment. We may not look for them, as Mr. Hutchinson tells us, within six months of the date of the primary lesion. Most of them relate to the arteries of the pia mater of the brain and spinal cord and in this way lead to nervous symptoms. The nervous elements may, however, be primarily involved in this stage, as evidenced by the occurrence of neuritis and myelitis with both motor and sensory symptoms. In this secondary stage the blood and inflammatory secretions of the patient are infective and capable of originating a chancre. The later or tertiary sequels occur without constitutional disturbance, slowly, generally unsymmetrically, and are more distinctly local in character. The patient's blood and secretions are non-infective in this stage.[2] Mr. Hutchinson is disposed to regard all tertiary symptoms of syphilis as true sequels, or more strictly "regroths." In support of this view he and other authorities adduce evidence showing that persons have become the fathers of families of healthy children, and have subsequently developed tertiary lesions. In such cases there must have been freedom from constitutional taint, although local conditions remained in a condition of latency or abeyance ready to be evoked by some determining excitant. It would be unseemly and unnecessary in these lectures to present to my audience any detailed account of the manifold tertiary symptoms of syphilis regarded as sequels, such being now matters of common knowledge. We are happily aware of the fact that in the majority of cases of primary syphilis prompt, adequate, and sustained treatment suffices practically to cure the disease and to avert the onset of sequels throughout life, and so we may fairly regard their occurrence as evidence either of imperfect original diagnosis or of incomplete treatment. The pathogenic conception of the malady as one dependent on a specific micro-organism helps us in forming an opinion, judging by analogy with the behaviour of other like organisms, that such particulate agents may long lie dormant in certain tissues and only wake up into activity under various provocations, such as irritation, exposure to exhausting agencies, depressed vitality from the inroad of other diseases, and traumatism. The unsymmetrical character of these consequent lesions affords some evidence of their local and non-constitutional nature. I have already referred to the occurrence of tabes dorsalis as a definite sequel in most instances of antecedent syphilitic infection, and I may add, too, that of general paralysis of the insane as one standing often in the same category. In my first lecture I adduced the fact that when women presented the symptoms of locomotor ataxia they were commonly found to have been at one time the subjects of constitutional syphilis. I regarded this fact as affording strong evidence of the former disorder being in consequential relation to the latter, as, in short, a quaternary sequel of syphilis. This contention is, I consider still further supported by the occurrence of examples of tabes dorsalis in both husband and wife. My colleague, Dr. Ormerod, has reported two examples illustrating this condition and he has referred me to a series of four or five other pairs of cases which have been recorded in this country, on the continent, and in Canada, also to cases of pairs of general paralysis of the insane, nearly all of which distinctly prove that syphilis was the common antecedent factor. I therefore regard this evidence as irresistible and practically proving the case.[3] In some of these instances the husband had tabes, and the wife general paralysis, or *vice versâ*. Even tabes dorsalis has its own intercurrent sequels, amongst them being the peculiar acute onset of a riotous arthritis known as Charcot's arthropathy, which may affect several joints; also perforating ulcer of the foot, and the several varieties of crises, whether gastric, laryngeal, rectal, or vesical. We may note several degrees of gravity in the cachexia of inherited syphilis. There are often to be noted indications of a merely slight taint, such as anæmia, earthy complexion, and perhaps one or two characteristically modified teeth. General growth may be but little interfered with. In the graver cases we have usually present many, if not all, of the specific physiognomical indications, and in viable cases full development of the body is never reached. It is important to recognise even the minor indications of such taint, inasmuch as they may serve to throw light upon subsequently occurring obscure symptoms, and so afford a guide to treatment. Twelve years ago Mr. Hutchinson expressed the opinion that it is not the diathesis of syphilis that is transmitted from parent to offspring, but the germs of the disease itself—the particulate elements of the virus[4]; a transference, therefore, of contagion rather than hereditary transmission. "A child inherits syphilis in precisely the same sense and in precisely the same manner as it may inherit small-pox." He believes that "no minimised transmission of syphilis is possible." The child gets either nothing at all or the germs of the disease, and in the latter case they will, subject to the laws of idiosyncracy, develop equally in all cases. The minor indications of this specific taint I have alluded to may be amongst those which have not been permitted to develop fully owing to some inhibitory condition. Paralytic dementia, ophthalmoplegia, a variety of epilepsy, grave arterial atheroma, and general arterial sclerosis are certainly due sometimes to pre-existing syphilitic taint. These conditions have been called by Fournier parasyphilitic affections, by some post-tertiary, or quaternary. Lardaceous degeneration may sometimes be clearly traced to previous syphilis, not merely as an associated condition with gummata and a resulting fibrosis as in ordinary tertiary sequels, but as an independent and widely-spread degeneration both of viscera and of other portions of the frame, constituting, indeed, a variety of so-called syphilitic cachexia. Congenital syphilis may sometimes be followed by manifestations of Raynaud's disease with gangrene of fingers and toes. I have seen several examples. The conception in regard to these conditions is that the remote lesions are not directly due to syphilitic toxine, or to growths determined by it, but that a constitution having been once tainted by this special virus and its ravages, becomes a prey to other specific degenerative changes which would in all probability not have occurred in persons not subjected to such an ordeal. With several authorities I am in accord in regarding the occurrence of aneurysm as, not infrequently, a sequel of syphilis, and this contention is strengthened by the fact that when this condition occurs in women, which is rare, they have commonly been the victims of syphilis. The same view is also tenable, in my opinion, in respect of cardiac aneurysm, which is usually a result of gummatous carditis. The latest researches on syphilis support the view of Paget and others, that the long-delayed manifestations of syphilis plainly indicate that there remain in the tissues of the body residues of the disease after apparent recovery, and that these may be roused into activity, affording specific characters of their own or modifying the signs of other morbid conditions with which they may be associated or combined, such as gout and struma. Examples of this latency pertain, indeed, to each phase of syphilis. Thus, there may be remarkable delay in the formation of a hard chancre after primary infection. An indolent bubo has been known to precede the occurrence of induration on the penis by seven weeks, according to Mr. J. Hutchinson, jun. Secondary symptoms followed in due course with a more active condition of the bubo. A period of ten weeks was noted by Aimé Martin in another case before the occurrence of a hard chancre.[5] Delay in the

[2] For many of these statements I am indebted to Mr. Hutchinson's address at the Royal Medical and Chirurgical Society introductory to a discussion on Affections of the Nervous System occurring in the early (secondary) Stage of Syphilis. 1888.

[3] St Bartholomew's Hospital Reports, Vol. xxv., p. 87, 1889. Dr. Ormerod's references are as follows:—Dawson Turner, THE LANCET, Nov. 1, 1890; Goldflam, Neurologische Centralblatt, 1892, p. 445; Mendel, Ibid., 1895, p. 535; Reed, Montreal, a pair of cases seen in private (reported to Dr. Ormerod); S. Pearce, Journal of Nervous and Mental Diseases, 1895, p. 8; and Erb, Ætiologie der Tabes, 1892.

[4] The Pedigree of Disease, p. 89. 1884.

[5] THE LANCET, Dec. 21st, 1895.

onset of secondary symptoms has also been carefully noted. M. Diday's observations show, and Mr. Hutchinson confirms them, that intercurrent illnesses may cause such postponement. Thus, typhoid fever and pneumonia have been proved to cause postponement of secondary symptoms for periods varying from three to over five months, the activity of the specific virus being suspended till recovery from these illnesses had taken place. These facts are very remarkable. Mr. Hutchinson, jun., has recorded an example of extraordinary prolonged latency in respect of tertiary manifestations. A man contracted syphilis at the age of twenty-one years, had secondary symptoms, and remained wholly free from any lesions till, after exposure to much privation, he had, at the age of fifty-three years, multiple nodes on the skull, ischium, and humerus. For thirty-two years, therefore, there had remained potential elements within the body ready to resume activity on due provocation. The only analogous condition to this is that presented by the strange behaviour of the malarial organism which has a similar propensity to lie long dormant or latent within the body. "It is seldom that a syphilitic process develops thirty years after the malady, whether it be a direct or indirect process. ..... A period of thirty years after the primary disease brings most patients into the degenerative period of life ..... but the syphilitic virus has then generally ceased to act."[6] It is highly probable, but not yet proved, that the infective microbes, if such they be, or possibly their germs, are present in tertiary deposits and completely localised there, though not always inactive. Some arguments in favour of this view have lately been adduced by my former house physician, Dr. Parkes Weber, in two able papers on the subject of Syphilis published in the *American Journal of the Medical Sciences*. He further expresses his belief that in the post-tertiary or quaternary sequels, such as tabes dorsalis, microbes will not be found, and that thus there is a clear demarkation between tertiary and quaternary lesions. He is also of opinion that the metabolic products of the specific organisms have, like those of the staphylococcus pyogenes aureus and the bacillus pyocyaneus, the peculiar property of inducing lardaceous formation in their immediate neighbourhood.[7] The presumed localisation and latency, or comparative latency, of surviving microbic germs appear adequate to explain the fact that persons so infected may long continue to produce healthy children, for our latest conceptions of syphilis lead us to regard the various active processes which it induces as the results of the presence of developed organisms circulating abundantly in the blood in the secondary exanthematous stage, and leaving behind germs localised in various textures which are inoperative till some exciting cause sets up their development with new tissue-growths and other tertiary manifestations in later stages.

Pyæmia.—There are sometimes to be met with cases of chronic arthritis or of articular deformities, with ankylosis, which have developed from an attack of pyæmic arthritis, which may have occurred perhaps many years previously. Malignant endocarditis is sometimes a sequel of pyæmia.

Having now described the various sequels which are recognised in the train of the great class of acute and infectious diseases the greater part of my task is accomplished, for not many others than these can be affirmed to have true sequels.

Taking the whole class of *Nervous Diseases* we can find but few remote consequences which can fairly be regarded in the light of sequels. Imperfect recovery may lead to recurrence, and the onset of new symptoms for the most part betokens further progress in any such morbid process, strange and unconnected with the original disorder as they may appear to be. The sequels of chorea commonly depend on renewed activity of rheumatic processes in other parts of the body, and relapses are frequent. Caleb Parry stated that the worst case of spasmodic wry-neck he ever met with followed chorea. This must be a very rare sequel.[8]

We may note the onset of a form of riotous arthritis as a sequel sometimes in cases of syringo-myelia, a condition singularly akin to the arthropathy described first by Charcot in cases of tabes dorsalis.[9] Sufferers from megrim and chronic headache, especially females, are sometimes in middle life and later the subjects of xanthelasma in the eyelids. A happy and frequent sequel of hemicrania is an immunity from it after middle life, so that sufferers cease to be its victims even when subjected to conditions which formerly and unfailingly provoked it. Certain varieties of zona have sequels, some of which are not unimportant. Supra-orbital zona may, especially if the nasal branch of the nerve be involved, lead to ulceration of the cornea, iritis, photophobia, conjunctivitis, partial ptosis of eyelid (involvement of third nerve), defective vision temporarily, or even permanently, with papillary atrophy.[10] Troublesome neuralgia may ensue. This variety of zona is further remarkable for leaving indelible scars behind it. Necrosis of the alveolar part of the lower jaw, with loss of several teeth, was noted by Paget as a sequel of infra-maxillary zona.[11] Sir Thomas Watson's cases are noteworthy; in one, a patient who had been annoyed with continual noises in his head for seven years, became free from them for eighteen months subsequently to an attack of zona of the scalp; in another, a chronic teasing cough disappeared on the supervention of zona. The worst sequel is that of terrible and rebellious neuralgia, which more especially plagues elderly subjects who have suffered from herpes zoster. This may last for months or even for ten or fourteen years, as in cases described by Trousseau[12] and Watson.[13] Injuries to nerves may be followed by vesicular and bullous eruptions and by glossy condition of skin. The sites of former zonal eruptions may subsequently become anæsthetic, hyperæsthetic, or pruritic. Pigment may also be removed from adjacent areas of the integument. An attack of herpes limited to the foot has been reported as following a twist of the ankle-joint.[14]

As bearing on the subject of neuro-trophic lesions and sequels I may refer to two cases within my knowledge where the hair from every part of the body was permanently lost in two male adults after injury to the head caused by violent concussion.[15]

Not many sequels are recognised after the occurrence of diseases of the *respiratory system*. An attack of pneumonia sometimes appears to predispose patients to subsequent attacks. Bronchitis sometimes evokes attacks of spasmodic asthma, which might possibly never have supervened but for the original disorder. We may regard the fatty and lardaceous changes in the liver following on pulmonary tuberculosis as varieties of sequels or consequential degenerations, the latter change ensuing more especially upon prolonged purulent discharge from vomicæ. Neglected and inadequately treated empyemata commonly lead to this condition. Lardaceous change is certainly less frequently met with now than formerly, probably because suppuration is better controlled by modern surgical methods of treatment. We may note the occurrence of rheumatoid affections and of cerebral abscess as pyæmic sequels to bronchiectasis, a condition now also better understood and treated than formerly. We should hardly be justified in regarding fatal hæmoptysis in cases of chronic phthisis, due to aneurysm of a branch of the pulmonary artery, as a true sequel, or the occurrence of tuberculosis as an apparent outcome of an attack of pneumonia. We should have to prove that the original process was not a tuberculous invasion. We may, however, certainly regard as a sequel the occurrence of neuralgia of branches of the fifth nerve supervening on severe attacks of coryza. Respecting pleurisy, whether dry or with more or less effusion, we may still seek to discover whether, when it arises on the right side, it is more commonly the precursor, if not the first step, in the progress of pulmonary tuberculosis. Left-sided pleurisies appear to be more commonly benign in character. This is an old doctrine of the French school and was taught at Edinburgh in my time, and I think there is something to be said in support of it. Many cases presenting strumous adenoma are void of tuberculous symptoms in after-life. Others develop pulmonary tuberculosis, or in advancing years, under the stress of acute

[6] Gowers: Lecture on Adult Anterior Poliomyelitis, Clinical Journal, Feb. 12th, 1895, page 41.

[7] Op. cit., November, 1895.

[8] Elements of Pathology and Therapeutics, Second Edition, vol. i., p. 258, 1825.

[9] Howard Marsh: Diseases of the Joints, &c. Account of this affection by J. H. Targett.

[10] Vide J. Hutchinson, Royal London Ophthalmic Hospital Reports part iii., vol. v., and J. Bowater Vernon, St. Bartholomew's Hospital Reports, vol. iv., p. 121, 1868.

[11] Brit. Med. Jour., 1866, p. 492.

[12] Clinical Medicine.

[13] Op. cit. The late Sir Robert Christison, my former revered preceptor in Edinburgh, suffered from this condition at an advanced age. He told me he secured more relief from his sufferings by brisk walking exercise than by any other measures.

[14] Medical Chronicle, March, 1893, p. 366 (quoted by Malcolm Morris).

[15] One of these is recorded in my paper on the Nature and Treatment of Porrigo Decalvans in Vol. viii. of St. Bartholomew's Hospital Reports, 1872, p. 153.

illnesses, become the subjects of new and revealing developments of senile scrofula. Amongst the sequels of chronic nasal catarrh, and often aggravating the condition, are post-nasal adenomata, polypi, and enlargement of the tonsils. Pneumonia may sometimes have a very untoward sequel in the form of pneumococcal endocarditis with a fatal issue therefrom. A case of this kind occurred lately in the practice of my colleague, Dr. Church, and death occurred with sudden onset of anginal symptoms owing to plugging of the coronary artery by the new growth from one of the aortic valves. Osler has found that pneumonia is an antecedent of malignant endocarditis in 25 per cent. of all cases of that disease.[16] Disseminated cerebro-spinal sclerosis has also been known to follow in the train of pneumonia.

Nothing very definite can be affirmed respecting consequences of *diseases of the heart and bloodvessels* which may not rightly be regarded as evolutionary manifestations to be expected in accordance with our modern knowledge of them. We may note the fact that the subjects of congenital cardiac malformation, even when viable to the period of puberty, never attain mature growth, and are bad subjects for the exanthemata, especially for the invasion of scarlatinal poison, and are often prone to be tuberculous. A similar stunting of growth pertains to almost all subjects of endocarditis, with valvular disease, attacked before puberty. Osler remarks that death is due in many cases of congenital heart disease to abscess of the brain. This fact has never been verified in our experience, within my knowledge, at St. Bartholomew's Hospital. Within the last few weeks, however, a case under the care of my colleague, Dr. Church, in which suppurative meningitis occurred, proved fatal. There was no ear disease. There was stenosis by fusion of the three segments of the pulmonary valves, leaving an aperture admitting a swan's quill, and the septum of the ventricles was deficient in the usual situation. The patient was a fairly well developed girl aged sixteen. There was much cyanosis. Headache, several general convulsions, and bilious vomiting occurred for a week before death. The temperature never exceeded 100·6° F. The relation between the cardiac condition and meningitis or cerebral abscess I am quite unable to explain in such cases, and I know of no other author who mentions the connexion but Osler.[17] Insanity sometimes supervenes in cases of aortic and mitral valvular diseases during the stage of compensation, and has been known to lead to suicide.

Ear diseases have sequels which are only too common but now well recognised. I have incidentally alluded to such as occur after the acute infectious fevers. Suppurative meningitis, cerebral or cerebellar abscess, necrosis of the petrous part of the temporal bone, and infective thrombosis of the lateral sinus and internal jugular vein are the chief consequences; and a general pyæmia is not seldom a result, direct infective particles being readily conveyed to the lungs to set up multiple and still further purulent and septic foci of the disease. Prompt surgical measures now, happily, avert many of these terrible sequels. We have further to bear in mind the possibility of otitis media in many patients presenting cerebral symptoms who have no ordinary indications of ear disease as the primary source of this malady.

Respecting the sequels of *gout* I have nothing to note. The many and varied disorders occurring in persons goutily disposed are often distinctly gouty. The several visceral and tissue degenerations observed in grave cases are evolutional manifestations of this disorder. Traumatism, shocks, bodily or mental, or operative procedures may all give rise to outbursts of gout in predisposed subjects and are thus provocative of this revealing symptom.

I may refer to the fact that *adenoid growths in the naso-pharynx* sometimes lead to subsequent tuberculosis, impaired mental functions (aprosexia of Guye), disease of the ear, and to stunted growth of the body. With the activity of modern surgery, which now a days seldom permits these new growths to induce any of these evil conditions, we may perhaps find such sequels of less frequent occurrence in the future. I might add my opinion that operative interference in these cases is not always imperatively necessary.

Such sequels as occur in patients who have been subjected to *ovariotomy* relate rather to physiological than to pathological manifestations. An obese tendency is common, while vocalisation approaching that of the male, growth of hair on the upper lip and chin or over the entire body, loss of general energy, tendency to indulge in stimulants, and proneness to gout have been noted. This is interesting when considered with the commonly asserted statement that eunuchs do not suffer from gout. To these may be added the onset of symptoms of a premature menopause, with flushings, chills, and profuse sweatings. The spleen may, as Mr. Knowsley Thornton informs me, become temporarily enlarged a few months after this operation. He has observed the occurrence of pains in the joints, tendons, and fasciæ, but these have subsided generally within a year or two, but he believes any other changes to be exceedingly rare.

Amongst *diseases of the skin* we may observe the tendency of some scars to become the seats of Alibert's keloid. Long-persisting local irritation may eventuate in the formation of fatty and fibro-fatty tumours, and predispose to malignant growths. Psoriasis may pass into lichen ruber. Chronic tinea capitis may lead to patches of area which, so far as I regard the latter, are neurotrophic and non-parasitic. General dermatitis may supervene on ringworm. Dr. Abraham had an example of this kind under his care. Erythema appeared over the trunk, desquamation of the palms and soles followed, and the skin assumed a xerodermia-like condition with furfuraceous scaliness. Anthrax has sometimes been followed by malignant endocarditis. It is still undetermined whether acro-scleroderma is a true sequel in cases of Raynaud's disease. The association of the two conditions is certain. If we enlarge, as I think we should do, our conception of the state known as Raynaud's disease or local asphyxia I think it is permissible to believe that such cases may sometimes eventuate in a condition of wide-spread scleroderma with telangiectases and acro-sphacelus. I have now under observation in private a grave example illustrating these changes. Lupus may sometimes become the seat of epithelioma, and the inflammatory lupoid ulcerations met with in Kaposi's disease (xerodermia pigmentosa) may also produce cancer. It is not yet determined whether the condition of skin known as Paget's disease of the nipple, scrotum, and penis is a benign form of eczematoid irritation due to psorospermial infection, leading ultimately to cancer, or whether it be, as held by Dr. Thin, cancerous disorder throughout. In most cases of mycosis fungoides there is also a long preliminary stage of eczematoid disease, not seldom mistaken for chronic eczema, urticaria, or erythema, which is followed months or even years afterwards by the special fungating lesions. Sometimes the latter appear without any superficial dermatitis. It is not without interest to know that an attack of erysipelas is alleged to have cured one case of this intractable and slowly fatal disease. A variety of xanthoma, temporary in character, is occasionally met with in the course of chronic glycosuria, probably due to irritation either from glucose or some ill-metabolised matters in the circulation.

The consequences of specific *gonorrhœal* infection are well known in the form of ophthalmia, often incoercible arthritis, especially in those of a gouty habit of body, and in flat-foot. The toxine generated by the gonococcus may sometimes prove very virulent. Whether it be generated directly by this organism or whether, as in the case of diphtheritic bacilli as shown by Dr. Sidney Martin, it arises from a chemical substance of the nature of a ferment, which acts upon albumoses in the body and converts them into a toxine, is not yet ascertained; but it has been suggested by Dr. Gowers that this may in some cases alight upon the nervous structures as it does in others upon joints, and so set up a rapidly spreading myelitis which has sometimes proved a fatal sequel of gonorrhœa. Dr. Gowers has described a case of this kind which ensued three weeks after primary infection and one week after convalescence. The patient was an overworked youth of nineteen years of age. Gonorrhœa in youth appears to predispose to urethral stricture at a period of life when prostatic changes set in. Dr. Hale White has recorded two cases in which malignant endocarditis resulted from gonorrhœal virus, the pulmonary valves being affected in each case.[18] Pericarditis, pleuritis, and peritonitis are also amongst recognised sequels, and gonococci have been found in the pus of gonorrhœal ophthalmia and may probably be discoverable as the cause of the iritis which is often associated with it. In women ovaritis and chronic pyo-salpinx may follow gonorrhœa.

Obesity is sometimes a sequel of acute illnesses and is especially frequent after enteric fever and pneumonia.

[16] Other experience does not support this observation.
[17] Principles and Practice of Medicine, second edition, 1895.
[18] THE LANCET, Feb. 29th, 1896, p. 534.

Anæmia, hæmorrhagic or otherwise, may also be followed by obesity, and the same condition has been observed to develop after courses of mercury.

There are no very noteworthy sequels in the train of *diseases of the alimentary system*—none, that is, in the sense in which I have considered them in these lectures. Most consequences of these disorders relate to renewed attacks or are of the nature of complications and direct extension of morbid processes. I may mention the occurrence of tetany as sometimes following cases of gastrectasia, especially after the stomach has been washed out (Kussmaul). In cases of chronic indigestion in young children, described as the "coeliac affection," or diarrhœa alba, by Dr. Gee,[19] when recovery is slow there is apt to remain a frail condition of health, with stunting of growth and a weakness in the limbs, the child being unable to jump. Leucoma, psoriasis, syphilitic ulcers, and all varieties of irritation of the tongue are amongst recognised conditions which may eventuate in the sequel of carcinoma at some later date. Gastro-intestinal catarrh has been observed in one case to be followed by paresis of the lower extremities, according to M. Potain, and the same authority has described a case of secondary spinal paralysis which followed chronic diarrhœa. Right hemiplegia with anæsthesia has been also noted in the course of gastro-intestinal catarrh. It is not improbable that some febrile disorders as yet not differentiated may arise from absorption into the system of toxalbumens from the alimentary canal. Mr. Macnamara has suggested that septic products due to many carious teeth may thus sometimes exert pernicious effects, including some forms of painful arthritis.

Hepatic diseases.—The vagaries and symptoms set up by gall-stones are fully appreciated and tend to many and strange sequels—biliary fistulæ, pyrexia, catarrhal cholangitis, and intestinal obstruction amongst many others. Some of the most difficult diagnostic problems, clinical mysteries, come to be solved by the presence somewhere of biliary calculi. In a considerable number of cases carcinoma is the outcome of their continued irritation, arising in the gall-bladder or gall-ducts and gradually invading the liver texture and even spreading generally to the abdominal lymphatics, the lungs, peritoneum, and omentum. Biliary calculi being more frequently present in women this grave sequel is rather more common in them. Dr. Norman Moore met with ten examples of cancer of the gall-bladder and large bile-ducts, five in each sex, all of carcinoma. Gall-stones were present in four and a calcified hydatid cyst in one.[20] The occurrence of xanthelasma may be mentioned as an occasional sequel of chronic jaundice. In several cases of hepatic abscess I have known the patient to suffer from recurring pain in the region of the liver, evidently due to adhesions. This has been severe enough to arouse fear of a fresh abscess. In one case an officer could never comfortably bear the weight of his sword when doing duty on his horse. In another case death occurred within two years owing to adhesions between the liver, stomach, and adjacent parts, the original abscess, a very large one, having long been healed. No operative measures would have been of any avail.

Diabetes cannot be said to have any sequels, properly so called. The conditions of glycosuria as a manifestation of goutiness, the result of faulty metabolism in intestinal digestion or of hepatic inadequacy, is one which induces a general faulty nutrition and a vulnerability of the tissues of the body, which may expose the patient to special dangers under the stress of acute diseases, or render him especially liable to tuberculosis, boils, carbuncles, and gangrene. A saccharine impregnation of the blood appears to render that fluid a better medium for the cultivation of microbes.

Animal Parasites may lead to several untoward sequels. Thus, the blood-flukes—Bilharzia hæmatobia—as a cause of endemic hæmaturia may form nuclei for the formation of vesical calculi and also induce a form of dysentery. Distomata, or liver-flukes, may lead to cholangitis, hepatic enlargement, jaundice, and ascites. Lumbrici may pass into the larynx or trachea, causing suffocation or gangrene of the lung, or they may enter the common and also the smaller bile-ducts. The bowel may also be perforated by them and peritonitis result. Trichiniasis, when recovered from in the acute stage, may leave behind it great muscular weakness, lasting for months, or, as in one case, for eight years. Filariasis may lead to a form of intermittent hæmatochyluria lasting for many years.

[19] St. Bartholomew's Hospital Reports, vol. xxiv., 1888, p. 17.
[20] Bradshaw Lecture, Royal College of Physicians of London, 1889.

The condition of *Anæmia*, apart from the pernicious variety, has but few sequels. It is commonly recovered from, and women who have suffered at one time from chlorosis are subsequently found to have good health and to bear children satisfactorily. In certain neglected cases, cardiac dilatation leading to grave symptoms may ensue, but adequate, that is prolonged, treatment should avail to avert any such sequel. As a constitutional condition, however, we may, I think, affirm that anæmia distinctly leads to gastric ulceration. It is certainly uncommon to meet with this disease in either sex if the patient's blood is of due corpuscular richness and adequate in respect of hæmoglobin. We may not accept the opinion that anæmia is the cause of Graves' disease, although there is not seldom some degree of this present, occasionally induced, as it would appear, by rebellious and intractable diarrhœa. I agree with Trousseau that many cases of anæmia require treatment extending over three years.

Ren mobilis.—Displacement of the kidney may lead to several troublesome consequences of which pain at the menstrual periods is a frequent one. Occasional strangulation of the vessels and ureter may occur, leading to hæmaturia and to occlusion by kinking of the ureter with temporary hydronephrosis. The hepatic flexure of the colon is apt to suffer by contiguity to the right and commonly displaced organ, and sometimes irritation is set up which ends in the establishment of adhesions between this part of the bowel and the kidney. Fears may thus come to be entertained of serious new growth in the colon, owing to localised pain, sense of fulness and resistance, and symptoms of partial obstruction of the bowel.

Renal diseases.—There are no recognised sequels of diseases of the proper structures of the kidneys which cannot be readily explained by the natural outcome and influences, far reaching enough as they are, of the original disorders of these organs. We are as yet, however, in ignorance of the ultimate clinical history of cases which we often meet with, known as examples of albuminuria of adolescents or cyclical albuminuria. We know that many persons so affected ultimately recover, but we wait for knowledge of the life histories of many more in order to be able to frame a prognosis for them and to direct the management of such cases. Paroxysmal hæmoglobinuria is met with sometimes in persons subject to Raynaud's disease, though not as a sequel. In my opinion, the former is sometimes but a phase of the latter state. Hæmoglobinuria of the toxic variety, due to dissolution of the blood-corpuscles, is sometimes witnessed as the result of the specific infectious fevers, such as scarlatina, variola, yellow fever, enterica, malaria, and syphilis.

Chemico-toxic Sequels.—Dr. Alexander Scott of Glasgow has recently recorded a case of poisoning by carbon monoxide vapour in which a form of dementia resulted with occasional and partially lucid intervals, and he tells of a similar case reported by Stockes of Lucerne.[21] The symptoms continued for three months up to the time of recording the case in Dr. Scott's patient, and in the other case were present two years after the poisoning. Slight but very slow improvement occurred in both instances. The explanation afforded is to the effect that the carbon monoxide combines with the hæmoglobin of the blood, forming a very stable compound, carboxyhæmoglobin, which will neither diffuse nor dissolve and which resists oxygenation. The nutrition of the body thus suffers, and in particular that of the brain and nervous system, with the induction of long abiding mental and other symptoms. Carbon monoxide may also lead to one variety of toxic hæmoglobinuria. As examples of other chemico-toxic sequels we have the ultimate effects of arsenicism in producing melasma, zona, and peripheral neuritis; œsophageal stricture and acute tuberculosis following the action of corrosive poisons; gout supervening on plumbism; saturnine nephritis, neuritis, and encephalopathy; tabes sicca from zinc impregnation; skin discolouration from silver salts;[22] tremor from mercurial poisoning; and neuritis caused by alcohol and by bisulphide of carbon.

Lastly, amongst favourable sequels may be mentioned the rare occurrence of involution or withering of malignant growths. This is met with in old persons in whom cancer often remains almost stationary. Dr. Robert Liveing and

[21] THE LANCET, Jan. 25th, 1896, p. 217.
[22] In one case of this kind (argyria) I found staining of the lining of the aorta. Transactions of the Pathological Society, vol. xviii., 1886, p. 99.

Mr. Morrant Baker had under their care a case of fibro-sarcoma of the scalp in a young man aged twenty-four years which slowly underwent involution. When last seen four years later the process of atrophy had greatly exceeded that of growth.[23]

Having now discussed so far as I am able the various consequences and sequels of diseases—some of which may possibly have been wrongly interpreted or summoned and alleged to do duty for them by reason of the mental temper which always besets an eager inquirer into any particular set of circumstances—I may sum up my efforts by endeavouring lastly and concisely to classify, in accordance with the most recent knowledge available, the sequels that have come under notice. I mentioned at the outset of these lectures that a distinction should be made between complications, even late ones, of diseases and the sequels of them. I have tried to make this distinction, but it has not been quite an easy matter to do so. We are strictly concerned with the consequences of disease, or, in other words, the diseases of convalescence. A consideration of the whole group of acute infectious diseases, which furnishes the greater number by far of those which have sequels, shows up this difficulty very strongly, for we have found that most of these consequential troubles owe their existence to specific residual infective elements which have lain dormant or more or less latent within the body, giving rise either to early or late sequels. These are, therefore, to be termed bacterio-toxic or microbic sequels. Of these we have examples in the various fevers, in diphtheria, influenza, malaria, and syphilis. We have seen that these may be manifested very variously in different organs and parts of the body. When affecting the nervous system they lead to central or to peripheral symptoms, according to the locality involved. With these we sometimes find associated sequels dependant on fresh invasion by microbic elements non-specific of the primal disease, but which are ever ready either within the system or outside of it to alight upon parts that have recently been rendered vulnerable by pre-existing morbid processes. These I term indirect sequels. We have seen that certain acute diseases sometimes reveal diathetic proclivities hitherto little marked or even dormant, as in the cases of gouty or strumous habits of body, or which, as in the case of syphilitic taint, awaken long latent residues and so evoke revealing symptoms of unexpected character. These I term revealing sequels.

The debility and diminished tissue-resisting powers of the body induced by acute diseases or by exhausting influences and low state of health open the door to fresh invasion from within or from without, and in this way invite new sequels and often a succession of diseases. So-called "surgical scarlet fever" is, without doubt, an instance of true infection by that specific disorder to which patients are particularly prone after the shock and wound of an operation, owing to the vulnerability and susceptibility thus induced. Traumatism of any kind is apt to be followed by revealing symptoms of some constitutional tendency or taint. Thus, we have instances of puerperal septicæmia set up by invasion of varieties of specific and toxic microbes. We meet with cases in which tuberculosis awakens and rages after injuries to the head and other parts of the body, such as joints, and we have already noted the occurrence of erysipelas as an attendant on traumatism. We may take note of the diathetic and local determinants which materially affect the original incidence and the sequels of diseases. Weak points are attacked, areas of special vulnerability, and organs and parts whose functions are inherently inadequate—*loci minoris resistentiæ*. We perhaps too little regard the frailties of particular organs and tissues, frail by inheritance and prone to premature failure and decay, although adjacent to other and more robust portions of the frame of the individual: for likeness of organs and tissues goes by descent, as does mere likeness of features. Hence many puzzling conditions and surprises in the study of diseases. But the clinical physician must take note of such. *Nervous sequels* relate chiefly to neuro-trophic disorders and neuralgia. *Sequels due to chemico-toxic influences.* Respecting many of these, we have to note the fact of symmetrical or bilateral nervous affections due to general impregnation of the system through the blood.

[23] Catalogue of the Anatomical and Pathological Museum of St. Bartholomew's Hospital, vol. iii., 1881-93, p. 383.

DISEASES OF CONVALESCENCE AND SEQUELS OF DISEASES.

Complications of Diseases.—(*a*) Early, (*b*) late. Incomplete convalescence.

Sequels.—1. *Bacterio-toxic:* (*a*) Early, microbic, or germinal, with short latency; (*b*) late, microbic, or germinal, with longer latency; residual diseases; ultimate evolutions or manifestations of the original disease; (*c*) direct, specific of the primary disease; (*d*) indirect, induced by the primary disease, but due to fresh or secondary infections by new toxines—(*a*) already present in the body, or (*b*) newly introduced from without (mixed infections), hence succession of diseases. 2. *Revealing:* Determinative of manifestations of constitutional habits of body or of inherited or acquired specific (? germinal or particulate) taint. 3. *Nervous:* Neurotrophic, neuralgic. 4. *Chemico-toxic:* Arsenic, lead, mercury, silver, carbon monoxyde, corrosives. 5. *Direct*, non-toxic: *Residual* sequels, &c.; Residual sequels probably determined to certain localities by tissue-predisponency—(*a*) inherited, or (*b*) acquired by previous injury—*loci minoris resistentiæ*.

We have found that most sequels of diseases are an increased burden for the patient, but we have also noted that a few of them are even favourable and happy. The great fact remains that the majority of sufferers from all manner of diseases are not the victims of sequels, and that for this majority the course of their maladies, when not directly fatal, is singularly and fortunately free from any important consequences. A study of the subject of the sequels of diseases cannot, however, fail to impress upon all of us who are actively engaged in treating patients during their illnesses the supreme importance of steadfastly regarding the patient, and not so much his disease, in all our therapeutic management. To conduct the patient prudently and safely through his troubles, to realise how he bears them and what they mean or may mean to him, to gauge his powers of tissue resistance and his reserves of vital power, to have regard to his mental condition and to all his particular environments, and to secure sound convalescence, is as far as possible to avert the worst consequences, early or remote, of the particular malady in progress. This, and no less than this, is the duty which lies before each one of us, and to carry it out effectually demands the best qualities both of head and heart that we can place at the disposal of our patients. And such qualities, Sir, I venture to say, have not been wanting in the lives and work of the majority of the great and good men who have adorned this venerable college and left us the legacy of their skill and of their characters; who have, no less, left us under the responsibility of maintaining here, as the Physicians of England, the highest standards of work, of duty, and of professional honour. May we try to be worthy of our predecessors. We can hardly surpass them in any of these qualities.

It only remains for me to offer to you, Sir, and to this auditory, my best thanks for the kind attention given to me in this course of lectures.

A PRELIMINARY NOTE ON

A METHOD FOR RAPIDLY PRODUCING DIPHTHERIA ANTITOXINS.[1]

BY G. E. CARTWRIGHT WOOD, M.D., B.SC. EDIN.

THE method for producing antitoxins described in this preliminary communication is the outcome of an investigation into the action of the products of the diphtheria bacillus on which I have been engaged for more than a year.[2] The toxines described by Continental observers have been those obtained from broth cultivations of the organism, where we cannot expect the products, even if identical in nature, to be present in the same proportions as when vegetating in the living body of an animal. More than eight

[1] A paper read before the Royal Society on Feb. 20th, 1896. (Communicated by Dr. Pye-Smith, F.R.S.)

[2] The investigation has been carried out in the laboratories of the Royal Colleges of Physicians of London and Surgeons of England, and I should like here to express my great indebtedness to the Laboratories Committee for the facilities they have afforded to me. I must also thank them and, through them, the Honourable Goldsmiths' Company, from whose Research Fund a grant was placed at my disposal.

years ago Hueppe[3] and I pointed out that we must grow the pathogenic organism on a natural albumin if we wished to obtain the toxines proper of the microbe; and working on this principle by inoculating hens' eggs with Koch's cholera bacillus we succeeded in producing much more powerful poisons than had been previously obtained. The toxines produced by the action of the diphtheria bacillus on albumen have been minutely investigated by Sidney Martin, and the occurrence of the same substances in the bodies of patients who have succumbed to the disease has proved the correctness of this view. In this communication I shall not enter into the precise nature of the products in question as my present purpose is to describe a practical method of rapidly producing powerful diphtheria antitoxins.

In these experiments two species of diphtheria toxine were made use of: firstly, the ordinary toxine produced by the organism in peptone broth; secondly, the substances present in serum broth cultivations which had been filtered and heated up to 65° C. [In the former the active principle consists almost entirely of the so-called ferment toxine, while in the latter this has been destroyed by heating up to 65° C. so that its action must depend on the presence of other substances.[4]] The medium employed for the production of the serum toxine was ordinary peptone broth, to which an addition of 10 or 20 per cent. blood serum or plasma had been added; where the latter was used the broth was previously decalcified to prevent coagulation. As a rule the broth was inoculated with a virulent diphtheria culture some three or four days previous to the addition of the serum or plasma and then incubated at a temperature of 37° C. for at least three or four weeks. Before being used for injection it was subjected to a temperature of 65° C. for about an hour and then filtered through a sterilised Chamberland candle to remove the bodies of the bacilli. This fluid will be spoken of subsequently as "serum" toxine in contradistinction to the ordinary poison, which will be spoken of as "broth" toxine. The serum toxine is characterised chiefly by giving rise to little local irritation but to marked febrile reaction, which is still more pronounced when the injection is repeated. As the diphtheria albumose described by Dr. Sidney Martin was characterised by precisely these properties, in all probability the potency of the serum toxine depends on its presence. In addition to these properties, however, it was found that animals which had been subjected to its action were rendered more or less refractory to subsequent infection, and this suggested the possibility of its application as a means of shortening the preliminary treatment which a horse must undergo before it can receive the large doses of broth toxine which are usually necessary for the production of antitoxin of any strength.

The first horse (No. 1) was treated on the same general principles which are adopted in immunising guinea-pigs—that is to say, it received a certain quantity of the "vaccinating" substance and after the elapse of ten or fourteen days it was subjected to the action of the microbe or toxine. During the first twelve days this horse received 380 c.c. of serum toxine spread over three injections on different dates. The temperature (starting at 99·25° F.) rose on the second day to 100·25° F. after the first injection (120 c.c. serum toxine), falling on the third day to 99·25°. On the fifth day, when 150 c.c. of serum toxine were injected, the temperature rose till it attained on the sixth day 101·75°, falling to 98·75° on the twelfth day, when 110 c.c. of serum toxine were injected. The temperature rose on the thirteenth day to 102°, falling to 99·25° on the fourteenth day. On the nineteenth day of the experiment it received 50 c.c. of unfiltered serum toxine (sterilised at 65° C.) and 150 c.c. of broth toxine (of which one-half c.c. killed a 500-gramme guinea-pig in forty-eight hours) the temperature rising to 101·5° on the twentieth day. This unfiltered serum toxine unfortunately gave rise to a small abscess which greatly impeded the treatment, and subsequent experience has convinced me that the bodies of the bacilli which gave rise to this irritation must be removed by filtration if the process is to be carried out smoothly and successfully. On the twenty-eighth day with the temperature nearly normal it received 50 c.c. of the same broth toxine, the temperature rising to 100·5°, and on the thirtieth day (temperature 99·4°) another injection of 115 c.c. The horse was then bled on the thirty-second day of treatment, and the serum was found to possess the strength of ten normal units, that is to say, $\frac{1}{10}$ c.c., protected a 250-gramme guinea-pig against ten lethal doses of broth toxine. As this strength is only attained by Roux's method after at least ten weeks' treatment it was evident that the serum toxine had considerably shortened the process. It may be mentioned that the horse which had been in very poor condition at the beginning of the treatment, steadily improved during the month. The experiment was not carried further with this horse, which was then subjected to the ordinary method for producing antitoxins where it reacted in every respect like an animal which had been under the usual treatment for several months.

In the case of the next horse (No. 2) it seemed safe to inject much larger quantities of the serum toxine, but to avoid the risk of constitutionally injuring the animal the addition of a certain amount of antitoxin was made. During the first twelve days 1350 c.c. of serum toxine had been injected, and mixed with this 50 c.c. of antitoxin obtained from the previous horse each c.c. of which contained ten normal units, the temperature never exceeding 101° F. after the injection. During the next week 550 c.c. of broth toxine (of which $\frac{1}{4}$ c.c. killed a 500-gramme guinea-pig in forty-eight hours) was injected spread over three injections, and to the last of these 100 c.c. of serum toxine was added. In the succeeding week it received 400 c.c. of the same broth toxine mixed with 250 c.c. of serum toxine in two injections, the temperature rising next day (twenty-fifth) to 102° F. On the thirtieth day the animal was bled ($\frac{3}{4}$ of a litre) and the antitoxic value of its serum estimated. It was found that $\frac{1}{100}$ c.c., $\frac{1}{200}$ c.c., $\frac{1}{300}$ c.c., $\frac{1}{400}$ c.c., $\frac{1}{500}$ c.c., and finally $\frac{1}{1000}$ of a c.c. protected completely against ten lethal doses of the toxine. After six weeks of treatment $\frac{1}{1000}$th of a c.c. protected against ten lethal doses, while on the ninth week $\frac{1}{2500}$th of a c.c. sufficed. In this experiment which furnished such brilliant results, as has been stated, antitoxin was mixed with the serum toxine injected, but that this was not at all necessary was shown by a subsequent experiment, in which another horse (No. 3) received no less than 2180 c.c. serum toxine in the space of a fortnight without any apparent injury. The serum of this animal was tested during the first and second weeks, before it had received any broth toxine, and it was found that $\frac{1}{10}$ c.c. and $\frac{1}{15}$ c.c. respectively protected guinea-pigs against ten lethal doses. On the third week $\frac{1}{25}$ c.c. protected, and at the end of a month $\frac{1}{1250}$ c.c. sufficed. [The large amount of antitoxin produced during the first two weeks, when the horse received serum toxine alone, was quite unexpected, and leaves still unsettled the question as to how far the acquired immunity produced by the serum toxine is due to increased tissue resistance or to the presence of the antitoxin in the fluids of the body.] These results are shown in Table I. (horse No. 3).

TABLE I.—*Horse No. 3.*

—	Antitoxic value of serum.	Amount of toxines injected.
7th day	$\frac{1}{250}$ c.c.	1200 c.c. serum toxine.
14th day	$\frac{1}{150}$ c.c.	980 c.c. serum toxine.
21st day	$\frac{1}{125}$ c.c.	650 c.c. serum toxine and 1050 c.c. weak broth toxine.
28th day	$\frac{1}{1250}$ c.c.	1100 c.c. serum toxine and 1200 c.c. stronger broth toxine.

Although the serum toxine had been used primarily in the expectation of rapidly immunising the animal and thus shortening the necessary period of treatment, the very high antitoxic value of the serum obtained from horses Nos. 2 and 3 suggested that the method might be applied effectively at a later stage. For the purpose of testing this a number of horses which had been under the ordinary treatment for from six to nine months were very kindly placed at my disposal by the Director of the Laboratories, Dr. Sims Woodhead. In the first experiments 200 or 300 c.c. of the serum toxine was mixed with the ordinary broth toxine, and injected as usual. The results obtained, although slightly better, were not at all so marked as one might have expected. On examining more in detail the horses in which the best results had been obtained it was found that these had been under more or less continuous treatment with the serum toxine, both toxines being

[3] Centralblatt fur Bakteriologie, No. 5, 1884.

[4] The passages in brackets were added after the reading of the paper.

injected as frequently and in as large amounts as possible. Guided by these facts four of the horses (Nos. 4, 5, 6, 7) received one evening each 300 c.c. of serum toxine and on the following morning an injection of weak broth toxine. Although the quantity of weak broth toxine would under normal conditions have produced hardly any effect it produced on this occasion most marked local and constitutional reactions. During the remainder of the week these horses received injections of weak broth toxine each day or on alternate days according to their condition, and on each occasion these gave rise to quite definite constitutional and local reactions. During the following week an injection of 300 c.c. of serum toxine was introduced, succeeded by similar quantities of weak broth toxines, as in the previous week. [It will be observed that all these horses received practically the same quantities of toxine, with the exception of horse No. 5 in which the injections were stopped earlier than the others owing to its temperature showing a tendency to remain permanently elevated. In horses Nos. 6 and 7 the production of antitoxine was much less than in Nos. 4 and 5, and this is, no doubt, to be ascribed to the injections producing much less marked reactions owing apparently to their greater refractoriness. In all probability, however, this condition might have been overcome by the use of larger injections and stronger broth toxine.] The rise in antitoxic value of the serum of these horses is shown in Table II.

TABLE II.

—	Strength of serum before treatment.	Strength of serum after sixteen days' treatment.	Amount of toxines injected during the sixteen days.
Horse No. 4 ...	$\frac{1}{400}$ c.c.	$\frac{1}{2000}$ c.c.	650 c.c. serum toxine and 2350 c.c. weak broth toxine.
Horse No. 5 ...	$\frac{1}{10}$ c.c.	$\frac{1}{100}$ c.c.	600 c.c. serum toxine and 1800 c.c. weak broth toxine.
Horse No. 6 ...	$\frac{1}{50}$ c.c.	$\frac{1}{10}$ c.c.	650 c.c. serum toxine and 2350 c.c. weak broth toxine.
Horse No. 7 ...	$\frac{1}{100}$ c.c.	$\frac{1}{10}$ c.c.	650 c.c. serum toxine and 2350 c.c. weak broth toxine.

These results indicate very strikingly that the rapid production of antitoxin depended at any rate in great part on the "cumulative" action of the toxines by means of which the animal was kept in a chronic condition of local and constitutional reaction. It is probable that we produce in this way the earlier stages of that condition of "supersensitiveness" described by Behring, in which an animal whose blood may be charged with the most powerful antitoxins suffers the most profound constitutional disturbance on the introduction of even the smallest quantities of toxine while at the same time the temperature of the animal may remain for months permanently elevated above the normal. By taking advantage, however, of this cumulative action in its earlier effects we are furnished with a means of easily producing much more powerful antitoxins than is otherwise possible, and it is probable that by the use of stronger broth toxine the method may be carried still further in this direction. This cumulative action may also be taken advantage of to obviate that most troublesome occurrence where an animal becomes apparently absolutely refractory, ceasing to react to the toxine and failing to produce antitoxin, so that it has to pass out of use for the purpose of producing the curative serum. Some preliminary experiments have, however, indicated that this cumulative action may be produced still more markedly by the use of other toxines than those elaborated by the diphtheria bacillus, a result which I was quite prepared for, as Woodhead [5] and myself had in a previous communication drawn special attention to this "summative" action of bacterial products.

Although this part of the investigation is still quite incomplete, an application of this principle which may be of importance may be here suggested. The excessively costly nature of snake venom and the practical difficulties of obtaining it in sufficient quantities have been a great obstacle to the immunisation of the larger animals or the production of "anti-venines" of any high degree of strength. It is probable that by the use of other toxines in the later stage the quantities of the costly snake venom necessary may be greatly lessened.

[In this preliminary communication I have dealt with horses which have been under treatment only for a short period, and have shown that antitoxins at least as strong as the best in use can be quickly and easily produced, but I have every reason to believe that under more prolonged treatment much more powerful diphtheria antitoxins can be obtained than has been previously possible.]

In conclusion it may be said that the following advantages may be claimed for the use of the toxines in the way I have described. 1. That powerful diphtheria antitoxins can be produced without risk in a much shorter period of time than has been previously possible. 2. That much more powerful antitoxins can be easily produced so that the amount necessary to be injected into a patient can be greatly reduced, and one of the great objections to its introduction into private practice in this country may be removed. 3. That the greater strength of the serum will permit of the patient receiving at the beginning of treatment a sufficient quantity of the serum at one injection when, as is universally recognised both by animal experiment and clinical experience, its curative action is exerted most markedly.

I must acknowledge my extreme indebtedness to the Director of the Laboratories, Dr. Sims Woodhead, for much invaluable advice and assistance during the course of this investigation.

[5] On the Antidotal and Summative Actions that the Products of Bacteria exert on the Course of Infective Disease, THE LANCET, Feb. 22nd, 1890.

THE RÔLE OF THE STREPTOCOCCUS PYOGENES IN HUMAN PATHOLOGY.

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IN 1880 Ogston [1] described the presence of streptococci in the pus of abscesses. In the fifteen years that have passed since then, our knowledge of the micro-organism has gone forwards by leaps and bounds. Its practical importance as a cause and concomitant of disease has correspondingly increased. Isolated workers have chronicled their observations, but unfortunately these observations to a large extent remain isolated. Therefore it seemed desirable to give a brief *résumé* of our present day knowledge, especially in consideration of the successful attempts which have been made in the treatment of streptococcic diseases. The introduction of the culture methods by Koch enabled Rosenbach [2] (1884) and Passet [3] (1885) to make a more complete study of the streptococcus. In the meantime, however, Fehleisen [4] (1882) had described the occurrence of chain-cocci in erysipelas under the name of "streptococcus erysipelatis." Extended observation soon demonstrated the presence of streptococci in many different pathological conditions, and to these cocci specific names were given, such as the streptococcus septicus of Nicolaier, [5] the streptococcus septo-pyæmicus of Biondi, [6] and the streptococcus pyogenes malignus of Flügge. [7] However, the opinion now almost universally held is that the grounds upon which these distinctions have been founded are insufficient and that there is but one species of streptococcus which plays a part in human pathology—viz., that generally termed "streptococcus pyogenes." The identity of the streptococcus pyogenes (Rosenbach) with that found in erysipelas and in puerperal fever was first affirmed by Widal, [8] whose position has subsequently been fully supported by Verneuil and Clado, [9] E. Fränkel, [10] Achalme, [11] and

[1] Archiv für Klinische Chirurgie, Band xxv., 1880. Report upon Micro-organisms in Surgical Diseases, Brit. Med. Jour., 1881, p. 369.
[2] Die Mikroorganismen der Wundinfectionskrankheiten. Wiesbaden, 1884.
[3] Zur Ætiologie der Acuten Eitrigen Entzündung. Fortschrift der Medicin, 1885, Band iii.
[4] Untersuchungen über Erysipel. Deutsche Zeitschrift für Chirurgie, Band xvi.
[5] Nicolaier and Guarnieri: Flügge's Die Mikroorganismen, ii. Auflage. 1888, p. 154.
[6] Die Pathogenischen Mikroorganismen des Speichels. Zeitschrift für Hygiene, Band ii., p. 225.
[7] Die Mikroorganismen. Leipzig, 1886, p. 153.
[8] Étude sur l'Infection Puerpérale. Paris, 1889.
[9] De l'Identité de l'Érysipèle et de la Lymphangite Aiguë. Comptes rendus de l'Académie de Sciences de Paris, tome cviii., p. 714.
[10] Zur Lehre von der Identität des Streptococcus Pyogenes und des Streptococcus Erysipelatis. Centralblatt für Bakteriologie, Band vi., 1889, p. 691.
[11] Considérations sur l'Érysipèle et ses Complications. Thèse, Paris, 1892.

most recently by Petruschky[12] and Marmorek.[13] The differentiation into species probably arose from the number of varieties of pathological lesion in which chain-cocci are found. Clinical and experimental evidences unite to show that diversity of lesion may be explained otherwise than by the presupposition that the infecting micro-organisms differ in species. There are four main factors the variations of which determine the nature and extent of streptococcic lesions. 1. The first and most important of these factors is the extraordinary variability in the virulence of the microbe. Starting from a streptococcus harmlessly inhabiting the buccal cavity we may pass experimentally through all stages till we obtain an organism of such exalted virulence as to be capable of producing a rapid and general infection (bacteriæmia). Any one of such experimental lesions finds its parallel in human pathology. 2. A variation in the site and depth of the infection produces a difference in the nature and severity of the lesion; this seems to explain why at one time an erysipelas is developed and at another time a phlegmon. 3. Varying resistance on the part of the body is the third factor in the production of a diversity of lesion; witness the severe streptococcic lesions met with in advanced cases of diabetes and Bright's disease. 4. The association of the streptococcus pyogenes with other microbes, pathogenic and non-pathogenic. These associations or "mixed infections" I propose, following the nomenclature of Verneuil, to call throughout this paper "polymicrobic infections."

The wide distribution of the streptococcus pyogenes renders it difficult in certain cases to determine what has been the immediate source (*Herkunft*) of the infecting cocci. Undoubtedly in a great number of cases an exogenous infection must be assumed. In the polymicrobic infections, however, while this mode of origin cannot be excluded, it is quite possible that the secondary streptococcic infection may be from cocci normally inhabiting the skin or mucous membranes (endogenous infection) and leading a saprophytic existence there under normal conditions. There are two further possibilities: (1) that the virulence of the streptococcus pyogenes is exalted by being associated with other microbes, pathogenic (e.g., bacillus typhosus) and non-pathogenic (experimentally bacillus prodigiosus); or (2) that the apparent exaltation is really an expression of a diminished resistance on the part of the body caused by the primary infection. In some of the polymicrobic infections both factors seem to be at work; in others only one. In most cases the primary coccic lesion can be determined, but there occur cases of generalised infection where after the most careful investigation the point of entry cannot be ascertained. For convenience such cases have been called by Jürgensen, Leube, and others "cryptogenetic infections." A strepto-mycosis (any streptococcic infection) is at first essentially a local process. It may remain local, giving rise to an erysipelas or a phlegmon, or it may become generalised, a condition ordinarily designated "streptococcic pyæmia," but better called "metastatic strepto-mycosis." The streptococcus gains access to the blood stream directly or indirectly by gradually working its way along the lymph paths, producing lymphangitis, inflammations of serous membranes, &c., and eventually entering the general circulation. These varieties of localisation occur in the polymicrobic as well as in the monomicrobic infections.

Erysipelas.—This affection is an ideal example of a strepto-mycosis. Jordan[14] has recorded cases where the staphylococcus pyogenes aureus was found in company with the streptococcus, but it is a question whether these were not cases of polymicrobic infection, the staphylococci gaining entrance after the commencement of the erysipelas. Although mainly a local disease the general symptoms are probably in some cases caused by a coccic invasion of the blood as demonstrated by von Noorden[15] and others. The local lesion is a dense small-celled infiltration. The cocci are found for the most part in the lymphatic spaces and vessels of the corium. The bloodvessels are as a rule free. Towards the edge of the red area the fibres of the cutis are œdematous and the lymph vessels contain numerous cocci. The cessation of the redness on the fourth or fifth day is due to the rapid disappearance of the infiltration by a process of fatty degeneration. While one part undergoes resolution a new part is, however, invaded. As regards the coccic distribution the erysipelatous lesion may be roughly sub-divided into three main areas from centre to periphery. 1. The area of resolution, where the process is beginning to subside; the cocci are comparatively few in number and in some places have entirely disappeared. 2. The area of active inflammation corresponding to the red part; there the streptococci are abundant in the lymph spaces and vessels. 3. The area of commencing coccic invasion, which extends for a short distance peripherally to the red area; the cocci are numerous and inflammation is just commencing. In severe fatal cases the general lesions are cloudy swelling of the kidney, liver, spleen, cardiac muscle, and pyogenic endocarditis. In such cases the streptococci have entered the general blood system and they may be found in pure culture in all the viscera (Hartmann,[16] Pfuhl,[17] and Petruschky). Metchnikoff[18] has affirmed that in favourable cases the streptococci are to a very large extent destroyed by phagocytes; while in fatal cases no phagocytosis was found when the micro-organisms had become generalised. The severity of the lesion in any given case of erysipelas depends for the most part on the degree of virulence of the streptococci. There is also distinct evidence that in man, as is seen experimentally in rabbits, the passage from one individual to another in epidemics of erysipelas exalts the virulence of the streptococcus, the later cases being more severe than the earlier ones.

Phlegmon of the skin (pseudo-erysipelas).—Phlegmon of the skin, although not necessarily always caused by the same organism, has very frequently the streptococcus pyogenes for its cause. Here, in contradistinction to erysipelas, there are progressive suppuration and breaking down of the tissues. The pyogenic chain-cocci rapidly invade the lymphatics of the subcutaneous tissues and set up a streptococcic lymphangitis and lymphadenitis. If the suppuration extends deeply there is great danger of purulent thrombo-phlebitis and general strepto-mycosis.

Pyæmia and septicæmia.—The general conditions following the introduction of the streptococcus into the blood are those which are loosely described under the collective names of "pyæmia" and "septicæmia." The terms "sepsis" and "septicæmia" were originally used to denote certain morbid conditions caused by *putrefactive* blood poisoning. Later, Davaine and Koch used the word "septicæmia" for certain microbic blood infections where the microbes multiply in the blood and cause a rapidly fatal disease. Anatomically it is distinguished from pyæmia by the absence of metastatic purulent deposits. Early in the history of bacteriology micro-organisms were demonstrated to exist in the wounds of pyæmic individuals and also in the metastases. Of all the numerous organisms which are found in pyæmia and septicæmia the streptococcus is the most frequent, although in what was clinically known as a "pyæmia" other micro-organisms have been isolated, notably staphylococcus pyogenes aureus, bacillus coli communis, gonococcus, and actinomyces. Thus, at the present time it must be accepted that "pyæmia" is a collective name for metastatic suppurative processes of differing origins (Virchow). The nomenclature is palpably defective. To be strictly accurate one should speak of a streptococcic pyæmia, or staphylococcic pyæmia, or still better of a "metastatic strepto-mycosis," and for cases which have been called streptococcic septicæmia "non-metastatic general strepto-mycosis," reserving the term "septicæmia" for a class of cases caused by the entrance and local multiplication of *putrefactive* organisms within the body. In the case of large wounds the usual thing which leads to metastatic strepto-mycosis is phlebothrombosis of the vessels of the wound. The thrombi break down and fragments are carried into the blood stream as septic emboli, which in turn give rise to purulent deposits at the site of their impaction. Since the introduction of the Listerian treatment of wounds such cases are uncommon, yet they are not infrequently seen after streptococcic middle ear disease with sinus thrombosis. Cases in which pyæmia follows a slight wound are still more uncommon, having their etiological position midway between cases of phanerogenetic and cryptogenetic infections. In

[12] Untersuchungen über Pyogenen Kokken. Zeitschrift für Hygiene' Band xviii., 1894, p. 413.

[13] Le Streptocoque. Annales de l'Institut Pasteur, tome ix., No. 7, p. 593.

[14] Die Aetiologie des Erysipels. Archiv für Klinische Chirurgie, Band xlii., p. 325.

[15] Ueber das Vorkommen von Streptokokken in Blut bei Erysipelas. Münchener Medicinische Wochenschrift, 1887, p. 33.

[16] Ueber die Aetiologie von Erysipel und Puerperalfieber. Archiv für Hygiene, Band vii., 1887, pp. 83–229.

[17] Ein Fall von allgemeininfection mit Streptokokken in Folge von Erysipel. Zeitschrift für Hygiene, Band xii., 1892, p. 517.

[18] Ueber den Kampf der Zellen gegen Erysipelkokken. Virchow's Archiv, Band cvii., p. 209.

the latter class of infection the cocci apparently enter the blood stream directly, giving rise to an endocarditis with secondary lesions in the spleen, kidneys, and liver, the part played by emboli seeming to be slight, as the resulting abscesses are usually small and miliary, although septic vegetations on the cardiac valves may cause typical embolic infarctions. In addition to the purulent deposits caused by the streptococcus pyogenes, putrefactive and gangrenous processes may be superadded—true septico-pyæmia.

Puerperal fever, puerperal pyæmia, and puerperal septicæmia.—In the great majority of cases of what is termed "puerperal fever" the cause is the infection of some part of the genital canal by the streptococcus pyogenes, but its action may be aided by other pyogenic cocci (staphylococci), and recent research has demonstrated that a puerperal fever may be set up by the gonococcus (Krönig[19]), bacillus coli communis (Maromrek,[20] Eisenhart,[21] Kleinknecht,[22] and others), the Talamon-Fränkel coccus (Czemetschka[23]), and a capsulated bacillus (Chiari[24]). The primary point of entry of the streptococcus may be in the vulva, vagina, or uterus, resulting in an inflammation and ending in necrosis of the tissue. The necrotic part sloughs and a "puerperal ulcer" remains. The further invasion of the system by the pyogenic organisms may take place by way of the lymph vessels or by the blood-vessels. Hence arise the two main forms of puerperal fever—the phlegmonous and the pyæmic. They have marked points of difference, yet the one may become the other, or both may be found coexisting. In phlegmonous puerperal fever the uterine mucous membrane is inflamed, the discharge has often a foul smell, and actual gangrene of the uterine wall may ensue: the lymphatics of the uterus are soon involved, the lymphangitis spreading to the loose connective tissue of the pelvis and to the broad ligaments, while later the lymphatics connecting the pelvis with the abdomen become similarly affected, peritonitis generally supervening. Pleurisy may follow, and if the progress of the disease is not arrested general infection sets in. The starting-point of pyæmic puerperal fever is usually a pyogenic metro-phlebitis at the site of the placental attachment. Thrombi are formed and sooner or later soften and break down; particles infected by chain-cocci are drifted off as emboli into the general circulation, and at the points of their arrest in the viscera metastatic abscesses are formed. A third form, bearing a strong resemblance to the rapidly fatal forms of non-metastatic general strepto-mycosis seen in rabbits after inoculation with highly virulent streptococci, may also be recognised. In cases of this class the macroscopic lesions are slight, although bacteriological methods demonstrate the fact that all the organs are teeming with specific cocci. In the primary genital lesion and in the various lymphangitides and metastatic foci chain-cocci were found by Waldeyer,[25] Orth,[26] Doleris,[27] and others. In the phlegmonous form it may be given as a general rule that the coccic distribution is limited to the parts inflamed, while in the pyæmic form they can be demonstrated in the blood at an early stage (Birch-Hirschfeld,[28] Hahn,[29] Ott,[30] and others). The severity of cases of puerperal fever seems to a large extent to depend upon the virulence of the cocci, and, as in erysipelas, the epidemic form is more severe than the sporadic. For the physician it is of extreme importance to determine if possible the source and nature of the infecting organisms. The researches of Döderlein,[31] Bumm, and others show that the uterine secretions of normal lying-in women are germ-free. In the vagina, however, various schizomycetes are present, and among them streptococci, but the latter are attenuated forms. The cause of this attenuation, according to Döderlein, is to be sought in the acid reactions of the secretions. To the already existing streptococci in the vagina may be due the strepto-mycoses occurring during pregnancy itself, but in the majority of cases the pathogenic streptococci are exogenous. Putrefactive organisms of themselves will not cause a puerperal pyæmia, as recently asserted by one of our most experienced gynæcologists. They may aid the streptococcus, the result being a combination of a pyogenic process with a putrid intoxication—septico-pyæmia, usually running an acute fatal course. In some cases the putrefactive organism isolated has been the proteus vulgaris of Hauser. The necrofactive action of the streptococcus probably aids the local development of the proteus. As a rule, however, puerperal fever is a pyogenic process caused by the streptococcus pyogenes only, and would, therefore, be better named "puerperal strepto-mycosis."

In a large number of diseases of the respiratory system streptococcus pyogenes plays a *rôle* of supreme importance. Claissé[32] has shown that it is responsible for many cases of bronchitis. In the lobular pneumonia following measles (Mosny,[33] Netter[34]), typhoid fever (Neumann[35]), scarlet fever (Babés[36]), and diphtheria (Prudden and Northrup[37]) the streptococcus is the organism almost exclusively met with. In the pathogenesis of certain cases of croupous pneumonia it is to be regarded as the primary cause (Finkler). The streptococcus described by Weichselbaum as the streptococcus pneumoniæ is, according to Mosny, identical with the streptococcus pyogenes. Harbitz[38] has recently described five cases of non-typically coursing croupous pneumonia, in four of which he found the streptococcus in pure culture. It is also a frequent associate of other specific organisms in lung diseases. In influenza it is of so frequent occurrence that it was described as the cause of the disease before Pfeiffer's classical researches (Finkler,[39] Ribbert,[40] Laveran,[41] Bouchard,[42] and others). As a rule, its association with the bacillus of Pfeiffer occurs in the more severe forms, and a fatal termination is not infrequent.

In cases of pulmonary tuberculosis the association of the streptococcus pyogenes with the bacillus of Koch is of enormous importance. It has been the subject of important researches by Cornet.[43] Petruschky,[44] Babes,[45] Spengler,[46] Pasquale,[47] Wunscheim,[48] and others. In twelve out of twenty cases Cornet demonstrated streptococci both during life and after death. In the hectic fever of phthisis the remitting temperature curve has been described as the "streptokken kurve." Although Petruschky has affirmed that streptococci from post-mortem phthisical material possess slight pathogenic attributes experimentally, still it is known that a general strepto-mycosis may follow (Canon[49]). Certainly the coccus is very frequently seen in the sputum of phthisical individuals, and Jakowski[50] has demonstrated it in the blood in the hectic fever of phthisis.

[19] Gonorrhoe im Wochenbett. Centralblatt für Gynäkologie, 1893 Band viii., p. 157.

[20] Loc. cit.

[21] Puerperal Infektion mit todlichem Ausgang verursacht durch Bacillus Coli Communis. Archiv für Gynäkologie, Band xlvii., 1894, p. 190.

[22] Beitrag zur Frage der Mischinfection bei Puerperalerkrankungen, Strassburg, 1895, inaugural dissertation.

[23] Zur Kenntniss der Pathogenese der Puerperal Infektion. Prager Medicinische Wochenschrift, 1894, No. 19.

[24] Ueber einen als Erreger einer Pyohaemie beim Menschen gefunden, Kapselbacillus. Prager Medicinische Wochenschrift, 1895, Nos. 24 and 27.

[25] Archiv für Gynäkologie, Band ii.

[26] Untersuchungen über Puerperalfieber. Virchow's Archiv, Band lviii., 1873, p. 437.

[27] La Fièvre Puerpérale et les Organismes Inférieurs. Thèse, Paris, 1880.

[28] Lehrbuch der Pathologischen Anatomie, Band ii., 1895.

[29] Zur Leichendiagnose der Septischen und Pyaemischen Prozesse. Virchow's Archiv, Band cxxiii., p. 1.

[30] Ein Casuistischer Beitrag zur Lehre von Puerperal Sepsis. Prager Medicinische Wochenschrift, 1892, Band xiv., p. 145.

[31] Ueber das Vorkommen von Spaltpilzen in den Lochien. Leipzig, 1892. Das Scheidensecret in seiner Bedeutung für das Puerperalfieber. Leipzig, 1892.

[32] Les Infections Bronchiques. La Semaine Médicale, 1893, No. 38, p. 297.

[33] Étude sur la Bronchopneumonie. Paris, 1891.

[34] Etude Bactériologique de la Bronchopneumonie. Archiv de Medecine Experimentelle, tome vi.

[35] Streptokokken bei Typhuspneumonie. Berliner Klinische Wochenschrift, 1886, p. 420.

[36] Bakteriologische Untersuchungen über Septische Prozesse des Kindesalters. Leipzig, 1889.

[37] American Journal of the Medical Sciences, 1889.

[38] Om Atypiske Krupöse Pneumonier Specielt om Streptokokpneumoni. Festskrif i anledning af Prof. Heiberg, 25 aars jubilacum, 1895.

[39] Infektionen der Lunge durch Streptokokken und Influenzabacillen, Bonn, 1895. Influenzapneumonie, Deutsche Medicinische Wochenschrift, 1890, p. 84.

[40] Anatomische und Bakteriologische Beobachtungen über Influenza. Deutsche Medicinische Wochenschrift, 1890, p. 61.

[41] Le Bulletin Médical, No. viii., 1890.

[42] Recherches Bactériologiques sur la Grippe et ses Complications La Semaine Médicale, 1890, p. 35.

[43] Ueber Mischinfektion bei Lungentuberculose. Wiener Medicinische Wochenschrift, 1892, p. 737.

[44] Tuberculose und Septicaemie. Deutsche Medicinische Wochenschrift, 1893, p. 317.

[45] Sur les Associations Bactériennes de la Tuberculose. Premier Congrès pour l'Étude de la Tuberculose, Paris, 1889.

[46] Lungentuberculose und Mischinfektion. Zeitschrift für Hygiene, 1894, Band xviii., p. 343.

[47] Die Streptokokken bei der Tuberlose-Infektion. Centralblatt für Bakteriologie, 1894, Band xvi., p. 114.

[48] Die Lungentuberculose als Mischinfektion. Prager Medicinische Wochenschrift, 1895, Band xx., pp. 16-18.

[49] Bakteriologische Blutuntersuchungen bei Sepsis. Deutsche Medicinische Wochenschrift, 1893, p. 1033.

[50] Beitrag zur Frage über die sog. Mischinfektion der Phthisiker. Centralblatt für Bakteriologie, 1893, Band xiv., p. 762.

The conclusions of Spengler from a series of fifty cases carefully examined bacteriologically probably express the true state of affairs—viz., that in ordinary lung tuberculosis only a small percentage of the cases are uncomplicated. The majority are polymicrobic infections, the principal agents being tubercle bacilli and streptococci. The latter penetrate the parenchyma of the lung, generally setting up inflammation. As a rule, bronchiectases and vomica formation are associated with the presence of a large number of streptococci in the sputum.

In the etiology of diseases of the nervous system and its membranes the streptococcus pyogenes is important. While the diplococcus pneumoniæ is the most common cause of epidemic cerebro-spinal meningitis, a few cases are on record (in small epidemics) where streptococci have been found (Bonome,[51] Oebke,[52] &c.). The identity of these with the streptococcus pyogenes is, however, still a matter of doubt and requires extended study. Certainly sporadic cases of suppurative meningitis are often caused by the streptococcus pyogenes (Neumann and Schaeffer,[53] Netter,[54] and Beck[55]). The point of entry of the cocci in these cases is doubtful. Some of them may probably follow primary unrecognised lesions in the middle ear, antrum, and nasal cavities. The lymphatic connexions which have been demonstrated by Axel Key and Retzius to exist between the nasal mucous membrane and the subarachnoid lymph space afford a possible channel for the passage of the infecting organisms. In suppurative meningitis following influenza a suppuration in the region of the foramina cribrosa and the ethnoid cells was present in one case (personal observation). In Beck's case a streptococcic meningitis appeared to be set up by a primary tonsillar infection of similar origin. In a case of Landry's paralysis, which was a secondary complication of variola, Oettinger and Marinesco[56] found streptococci in the bloodvessels and also in the cells of the cord.

The cavity of the mouth is one of the chief regions for streptococcic lesions, monomicrobic and polymicrobic. The recent researches of Lemoine[57] have shown that the commonest cause of *all* the forms of non-diphtheritic angina is the streptococcus pyogenes, which can usually be isolated in pure culture from the deeper parts of the tonsil. The association of the streptococcus with the Klebs-Löffler bacillus is one of the best known and most completely studied. Apart from the buccal cavity the streptococcus was not believed to be a pathogenic agent in the alimentary tract except in the case of typhoid, where its association with Eberth's bacillus gives to the cases a high degree of severity (Vincent[58]). Recently, however, several writers (Tavel, Eguet, and de Cérenville[59]) have described a very severe form of streptococcic enteritis, in which some of the cases presented acute choleraic symptoms with final septico-pyæmia, while on post-mortem examination enormous numbers of streptococci were found in the stomach and along the length of the intestine. In certain cases of icterus Sabrazes and Mongour[60] isolated by puncture streptococci from the liver during life. They think that in such cases the streptococci wander into the bile ducts from the duodenum where they are normally found (Gessner). Buhl has described typical acute yellow atrophy of the liver following severe general strepto-mycosis, and more recently Babés[61] has examined similar cases of acute hæmorrhagic strepto-mycosis accompanied by complete degeneration of the liver. In three out of four cases a gangrenous or putrid tonsillitis seemed to have been the starting point of the hæmorrhagic septicæmia. In the fourth case a streptococcic infection of the intestinal mucous membrane seems to have been the starting point.

The streptococcus pyogenes has frequently been found in suppurative pleuritis and in peritonitis. It has been isolated from cases of acute osteomyelitis (Fischer and Levy[62]). Netter[63] and Raymond[64] have found it a cause of so-called "pseudo-rheumatic fever," which in many cases is really a cryptogenetic strepto-mycosis. Widal affirms that it is a frequent cause of phlegmasia alba dolens. In cases of elephantiasis nostras it has been isolated in pure culture by Achalme and Sabourand.[65] Unna[66] has described a special form of acute exanthem under the term "phlytænosis streptogenes." In certain cases of primary acute nephritis it has been isolated (Mannaberg[67]). In scarlet fever it is so frequently found that some have maintained it to be the cause of the disease, but most regard it merely as an associate. It has been found in the various forms of angina, broncho-pneumonia, phlegmon, nephritis, otitis, pyæmia, complicating this disease.

In variola the suppurative stage of the eruption is caused by the secondary introduction of pyrogenic cocci—amongst them the streptococcus pyogenes. A metastatic strepto-mycosis in variola is not uncommon (Vagedes[68]). Marinesco[69] has also found streptococci in the central canal of the cord in a person dead from variola. To continue, however, the enumeration of the diseases in which the streptococcus pyogenes plays a part would be futile. Enough has been written to point out the vast field which is opened up for specific serumtherapy. One word, however, remains to be added on the transmission of streptococcic disease from animals to man. As yet observations are few. Holst[70] has recently recorded an account of four epidemics of acute gastro-enteritis, probably caused by drinking milk from cows suffering from contagious mammitis, a disease also caused by a streptococcus form (Nocard and Mollereau).

In a future communication I propose to deal with the question of the immunisation of large animals against streptococcic infection, work which has been carried on for many months by Dr. Ruffer and myself in conjunction with Mr. W. Robertson, M.R.C.V.S., of the British Institute of Preventive Medicine.

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VITALITY.

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II. Evidences of Vitality.[1]

Every living organism and every particle of living matter, however minute, affords evidence of the continual operation during its life of an active power or agency—vitality; and all the tissues of living organisms have been formed from matter which previously to formation had been under the direct influence of this vital power. There is not a piece of solid bone or tooth or shell, whether taken from an organism recently alive or from a fossil which lived thousands or hundreds of thousands of years ago, that does not bear evidence of its origin from living matter as distinct as that afforded by a piece of hair or horn or nail or feather formed within a few months and removed but yesterday from a living organism. In short, the matter of these and other tissues was once in the living state, and if only the microscopical structure, or even a cast of it, should have escaped destruction by violence or by chemical disintegration, it can generally be identified as having formed part of a living organism. In some instances special characteristics are so marked that the structure or its impression can be recognised as having belonged to a particular

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[51] Zur Aetiologie der Meningitis Cerebro-spinalis Epidemica. Ziegler's Beiträge zur Pathologische Anatomie, Band viii., 1890, p. 377.
[52] Ueber Meningitis Cerebro-spinalis. Berliner Klinische Wochenschrift, 1891, p. 1015.
[53] Zur Aetiologie der Eitrigen Meningitis. Virchow's Archiv, Band cix., p. 477.
[54] Recherches sur les Méningites Suppurées. France Médicale, 1889, No. 64, p. 733.
[55] Ueber ein durch Streptokokken hervorgerufene Meningitis. Zeitschrift für Hygiene, Band xv., 1893, p. 359.
[56] De l'Origine infectieuse de la Paralysie Ascendante Aiguë ou Maladie de Landry. La Semaine Médicale, 1895, No. 6.
[57] Contribution à l'Étude Bactériologique des Angines Non-diphthériques. Annales de l'Institut Pasteur, tome ix., No. 12, p. 877.
[58] Annales de l'Institut Pasteur, 1893, vii., p. 141.
[59] Contribution à l'Étude du Streptocoque et de l'Entéritet Streptococcique. Annales Suisses des Sciences Médicales, 1895, Série 2, livre xi.
[60] Deuxième Congrès Français de Médecine Interne. Vide Centralblatt für Bakteriologie, 1895, p. 335.
[61] Ueber die durch Streptokokken bedingte Acute Leberentartung. Virchow's Archiv, Band cxxxvi., p. 1.
[62] Deutsche Zeitschrift für Chirurgie, Band xxxvi., pp. 1 and 2.
[63] Un Cas de Pseudorheumatisme Infectieux à Streptocoques. La Semaine Médicale, 1892. No. 7, p. 48.
[64] Raymond and Netter: Pseudorheumatisme Infectieux. Bulletin Médical, 1892, p. 119.
[65] Sur la Parasitologie d'Éléphantiasis Nostras. Annales de Dermatologie et Syphilis, 1892, p. 592.
[66] Deutsche Medicinische Zeitschrift, 1895, p. 569.
[67] Aetiologie d. acut. M. Brightii, Zeitschrift für Klinische Medicin, 1890, Band xviii., p. 223.
[68] Mittheilungen ueber eine Pockenepidemie. Deutsche Medicinische Wochenschrift, 1896, p. 37.
[69] Deuxième Congrès Français de Médecine Interne.
[70] Festskrif i Anledning af Prof. Heiberg, 25 aars jubilacum, Chrsiiania, 1895, p. 113.
[1] No. I. was published in THE LANCET of Feb. 22nd.

species. Such results of vital action cannot easily be mistaken for products of mechanical or chemical action. The minute silicious remains of recent and fossil diatoms and the spicules of sponges are as clearly the result of past vital action as is a piece of fresh muscle or nerve.

The vital movements of the actual structureless living matter of an organism, the growth of living matter, its powers of analysis and synthesis, or of preparation for the last, and its derivation from pre-existing living matter, proclaim the existence of a power widely different from any mechanical, chemical, or other properties of non-living substances; and unless we admit the operation of vitality it will be found as impossible to account for the characteristics of the lowest, simplest organism, though it has been held to be nearly related to the inorganic as to explain the formation, structure, and action of the most complex organ of man himself. The powers or properties and the action of the simplest bacterium afford evidence of the operation of vitality as convincing as that afforded by the living matter concerned in the highest mental operations of man. Although it has been declared again and again that living things are machines, not one of the many advocates of mechanical doctrines of life has been able to point to one machine that has *grown* or to a living organism that, like every machine, has been made in separate pieces, afterwards put together, and then set in motion, to say nothing of repairing itself while working without intermission.

All attempts to prove, and they have been many, that this vitality—this special endowment of all life—is a kind of force or mode of energy have failed. Life cannot be included among forces and forms of energy. Neither can it be shown to be correlated with any of these. Vitality is not a mere name applied to certain phenomena, the true nature of which is to be elucidated in the time to come; nor is it reasonable to regard vitality as one of a number of unsolved and possibly insoluble mysteries of the universe, and therefore not a subject for scientific investigation. Vitality is certainly capable of being more accurately defined, and though it may remain a mystery as regards its origin the study of the results of its action and the consequences and effects of its operation upon material particles will almost certainly lead to more correct views concerning its nature. Vitality exhibits nothing in common with any so-called properties or activities in nature. Vitality stands absolutely alone, but in its action through nature, in the case of the very lowest as well as the highest organisms, there is much in common. It is always in very close relation with the matter it influences and it cannot act upon particles of matter even at a very slight distance from the seat of its activity, and it acts in a way in which no other force or power in nature is known to act upon matter. No vital action can be imitated, and the vitality of the lowest forms of life is as far removed from any known physical or chemical change as the highest and most complex form of vital action. Living and non-living actions belong to different categories and have nothing in common. The growth and multiplication of particles of living matter may be studied in the lowest organisms or in an elementary part or cell of any of the higher animals or man himself, and these vital forms of increase and multiplication are distinct from every kind of aggregation, coalescence, or process akin to crystallisation or deposition, of which as yet we have knowledge or experience.

But if, as I have endeavoured to show, a general survey of various organisms in widely separated classes of living nature furnishes convincing evidence of the constant operation in all living things of a marvellous and special power not to be isolated, tested, analysed, or transformed, to which the vital phenomena of each form of living matter must be referred, the more minute examination of any of the constituent elementary parts or cells of any one organism brings us, as it were, very much nearer to the actual seat of operation of this wonderful agency, and we are even enabled to realise to some extent the character of the changes effected in the non-living pabulum when it comes under the influence of matter already living. We can distinguish the living matter from the surrounding material, be it cell wall, tissue, or fluid, in which no vital changes occur. By the use of very high magnifying powers and successful illumination we may have under actual observation the minute particles of matter in which vital changes are actually proceeding. If, however, as seems very possible, we should be able to double or treble the highest magnifying powers now at our disposal, and if in many ways we may render still more perfect our methods of examination, we should still be so very far from discerning the actual particles of matter undergoing atomic rearrangement by the direct influence of vitality that we should not be able to add to our knowledge. Nor is there at present any hope of our being able to form an accurate idea of the precise manner in which the changes in position of the atoms is accomplished. Here, then, is the mystery, the solution of which must, it is to be feared, be put off till the time when new and important discoveries shall have been made concerning the analytical and synthetical operations proceeding in the living matter.

Let us look at the problem from another point of view—the minute structure and formation of any tissue or organ—and let us try whether we can suggest anything in the non-living world or anything that has been designed and made to act by man with which the life-made structures will compare. Think also of the means of repairing, and even of renewing, some structures during life without any disturbance of the action of the greater part of the adjacent tissue. Where in non-life can we find anything parallel? Every particle of the tissue of a living organism was once in the state of living matter before it manifested any tissue characters whatever. The arrangement of its component elements, the properties it exhibits, its internal structure, are all due to the changes brought about when the matter of which it consists was in the living state. Is not this, again, evidence of the operation of a peculiar power which acts in every living organism in every department of nature? Think over the characteristics and form of various organisms and their adaptation to the conditions under which they are placed, and the fact of the transmission of the characteristic features, even in minute detail, through countless generations—in some cases without modification, in others with limited changes, while in some, many centuries may have passed without all the possible changes in the characters of a species being exhausted. And yet, notwithstanding striking departures and in many different directions from the primitive form, each divergent variety still retains the wonderful capacity of reverting to the original type in a few generations. Such facts are, it need scarcely be said, peculiar to the living world and absolutely due to the operation of vitality.

As regards certain vital phenomena which can be studied only by the use of very high magnifying powers, I shall endeavour to show how far our real knowledge justifies us in looking forward at this time, and I shall try to indicate precisely where the mysterious and so far inexplicable vital changes are effected. The mysteries connected with physiological and pathological phenomena I hope to reduce to a small number, to indicate and limit the seat of operation of the real mystery of life and discuss in what the mystery consists. Some vital phenomena can now be actually recognised and subjected to investigation—indeed, I feel that we are approaching very near to some knowledge of the actual particles of matter which undergo vital change, that is, to a point beyond which it has not been possible to carry investigation—in fact, to the region of mystery common to every form of life that is, that has been, and that is to be. It is in this region that wonderful chemical changes far indeed removed from any that can be produced under laboratory conditions take place. By what means the changes in question are effected by vitality is at present unknown and may be unknowable. This part of my subject I shall venture to discuss when the change of the non-living nutrient matter which undoubtedly passes into the very substance of the living matter comes under consideration.

Living matter is also directly concerned in the production of the various secretions of glandular organs. The characteristic substances present in the secretion are not merely *separated* from the blood, but are actually *formed* by the so-called secreting cells. The living matter of each cell or elementary part takes up nutrient materials for the most part in solution and causes certain of these to live. The elements of the matter in the living state are rearranged under the influence of the vital power and caused to take up new relations in respect to one another, so that when the living particles pass into the non-living state the substances peculiar to the secretion are formed. In some secreting elementary parts or cells it is even possible to see some of the less soluble substances that have been formed, in the matter of which the outer part of the cell consists. For example, embedded in the soft material of the liver elementary part, oil globules, biliary matters, and other substances may

be detected on microscopical examination, while glycogen, urea, and some other substances may be shown to be present by chemical analysis. Not only so, but the quantity and the relative proportions of the respective constituents may be caused to vary by alterations in the food constituents. This is a matter of great interest to us, for when an organ is deranged by injudicious feeding we can in some cases, by a change in the diet for a sufficient period, and by the help of certain medicines, promote an increase or reduction in the amount of the constituents of which there may have been deficiency or excess, or we can encourage the removal of some substances from the organism and promote the retention of others. The different classes of substances formed in varying proportions such as proteids, fatty matters, salts, and carbohydrates, also vary according to the conditions under which the organism for the time lives. In some cases an organism may be caused to produce and to accumulate fat to an enormous extent, and it may more than double in weight within a short time, or, on the other hand, the animal may be kept lean and highly active—in fact, its muscular and nerve power may be increased and thus it may be made to perform work which would have been impossible if a large proportion of adipose tissue existed. But neither of these processes—the formation of fat or its removal—could be brought about in the absence of a special power operating in living things only, the increase of adipose tissue as well as its removal being effected by living matter. And we must bear in mind that the too rapid removal of the fat of adipose tissue by great changes in diet may endanger life.

Physiological and pathological phenomena include vital actions and depend upon vitality. They are not to be imitated or to be adequately explained by physics or chemistry in the present state of knowledge. We must in all cases admit the operation of a power communicated by pre-existing living matter to non-living matter of a certain composition and in a certain condition. Thus has the earth been peopled by successive generations of countless living forms of the most different kinds, all of which and at every period of existence have been dependent upon vitality, being also subject to pathological changes and various forms of disease.

TWENTY-FIVE CONSECUTIVE CASES OF STRANGULATED HERNIA; ONE DEATH.[1]

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DURING the last few years it has fallen to my lot to operate on 25 cases of strangulated hernia, of which only 1 died as a direct result of the operation. To simplify this paper I have appended a table of the cases. Twelve occurred in men, and 13 in women. The ages varied from twenty-six to seventy-eight years, 6 being over sixty and 3 over seventy years. The period of strangulation varied from ten hours (cases Nos. 11 and 22) to five days (case No. 16). The bowel in 1 case (No. 16) was greenish and had a putrid smell, but retained its shiny appearance. The omentum was gangrenous in Case 20 and the fluid in the sac, of course, decomposed and was very offensive, although the bowel looked alive, and recovered. The bowel alone was present in 9 cases; the bowel with omentum was present in 12 cases; and the omentum alone was present in 2 cases. Omentum was removed in 11 cases; the portion removed varied from a "mere tag," in Case 13, to a pound, in Case 10. Omentum formed a complete sac, adherent universally to the peritoneum, in Case 24, an umbilical hernia, and contained a large loop of strangulated small bowel. In Case 14 there were 3 hæmorrhages in the omentum, one of which looked at first sight like a knuckle of intestine. In Case 15 there was diffuse cellulitis of the abdominal wall, with sloughing of the convexity of the sac; all the sloughs were cut away, and the tissues swabbed with pure carbolic acid (the bowel being protected) before dividing the constriction, so that neither putridity nor acid could enter the abdominal cavity. This was of course a very serious complication, but the woman recovered with a fæcal fistula. The bladder was present alongside a strangulated right inguinal hernia in Case 25, a very rare occurrence. Up to 1893 only 59 cases had occurred in surgical literature,[2] and Macready[3] had only been able to collect 36 cases.

Details of procedure.—Chloroform was used as an anæsthetic in every case, although in Case 10 only a few whiffs were given, the patient being deeply cyanosed from a very acute attack of bronchitis. His knees were strapped down and his hands held whilst the skin incision was rapidly made. He was by no means "under chloroform." The anæsthetic was laid aside and the remainder of the operation conducted with the man conscious, and he experienced no pain during the necessary manipulation of the sac, intestine, and the removal of a pound of omentum; but when the sutures were being passed through the skin his language was "frequent and painful and free." In Case 20, an old man aged seventy-six years, with chronic bronchitis and emphysema, was operated upon propped up in bed with four pillows. Mr. Caregan administered a few drops of chloroform; with my left elbow I kept the patient's knee down and held a dissecting forceps in my left hand, the knife being in the right. The operation was quickly completed; it necessitated the removal of two pieces of gangrenous omentum, the return of the bowel, the ligature of the sac, and the introduction of only one suture in the skin. Both these cases recovered without a bad symptom. In all the operations speed was particularly cultivated and I believe had much to do with the happy result.

Treatment of the contents of the sac.—Investigations have demonstrated the poisonous nature of the fluid found in the sac of strangulated hernia. I need only quote Nepveu and Garré,[4] who found bacteria, and these did not appear to bear any relation to time or degree of strangulation (putridity apparent to the sense of smell being no guide). Clado[5] inoculated animals with fluid from the sac of a strangulated hernia. The animals died, and the organisms were found in the blood, spleen, lungs, and the serous cavities. He considers death in strangulated hernia due to the introduction of organisms from the intestinal tract into the general circulation. This position is strengthened when we bear in mind that about 10 per cent. die when the strangulated hernia is reduced by taxis. Benno Schmidt[6] considers the field of operation in strangulated hernia already septic. Bearing in mind these and similar statements by many investigators, special attention was paid to disinfection of the sac contents as soon as opened and before any attempt at reduction. This was always carried out by freely washing the fluid away with hot 1 in 40 carbolic lotion, until every shred of lymph and blood-stained material was thoroughly removed from amongst the coil or coils of intestine and the interstices of the omentum when present. When it was decided to remove omentum a fresh portion was dragged down and this ligatured and divided, when the piece in the sac, being now deprived of its blood-supply, could be forcibly torn away, if adherent, without risk of hæmorrhage. This method materially aids rapidity of procedure.

Radical cure.—In the worst cases, and in the old people, Czerny's radical cure, simple ligature of the neck of the sac, was performed. Macewen's method being used in the younger patients and in those cases where urgency was not so imperative and a more certain radical cure indicated. Two cases (Nos. 4 and 17) had congenital inguinal sacs, and the portion cut off for a tunica vaginalis was closed with a continuous catgut suture.

Treatment of wound.—Silkworm gut sutures, double cyanide gauze under wood wool tissue, and a suitable bandage or binder were used. In only two were there wound complications—Case 15, where a fæcal fistula formed, and Case 25, where the wound suppurated, necessitating the reopening of the inguinal canal. This was due to contamination with ammoniacal urine from a hernia of the bladder, which complicated the case. It occurred in a man aged fifty-nine years, who was admitted into the infirmary for strangulated hernia, and operated upon at once (11.30 P.M.). He

[1] A paper read at the Liverpool Medical Institution on Jan. 30th, 1896.

[2] Deutsche Zeitschrift für Chirurgie, Leipzig, 1893, p. 301.

[3] Ruptures, Macready.

[4] Centralblatt für Chirurgie, No. 50, p. 869.

[5] Revue de Chirurgie, 1889, p. 927.

[6] Berliner Klinische Wochenschrift, 1883, p. 308.

TWENTY-FIVE CONSECUTIVE CASES OF STRANGULATED HERNIA.

No.	Age.	Sex.	Where operated, and date.	Doctor's case.	Variety of hernia.	Strangulated time.	Contents of sac.	Condition of bowel.	Details of operation.	Result.
1	58	M.	Ormskirk Workhouse, Dec. 19th, 1891.	Mr. Anderton.	Right scrotal.	2 days.	8 inches of bowel and omentum.	Dark purple.	4 oz. of omentum removed; Ball's radical cure.	Cured.
2	30	M.	Liverpool Royal Infirmary, Nov. 12th, 1892.	—	Right inguinal.	?	Loop of the bowel.	Dark purple.	Ligature of the neck of the sac.	Do.
3	76	M.	Wavertree, Nov. 26th, 1892.	Dr. O'Hagan.	Left scrotal.	2 days.	4 inches of bowel, omentum congested and hæmorrhagic, blood-stained serum 2 oz.	Dark purple.	The ring was incised; neck of the sac ligatured.	Died.
4	26	M.	Liverpool Royal Infirmary, Jan. 8th, 1893.	—	Right scrotal.	19 hours.	6 inches bowel; congenital sac strangulation by external ring; bowel in canal normal.	Dark purple.	The sac was divided; the tunica vaginalis was sutured for testicle; the neck was ligatured.	Cured.
5	69	F.	Private house, June 5th, 1893, 12.30 A.M.	Mr. Edwards, Anfield.	Left femoral.	3 days.	"Large knuckle" (no omentum).	Dark purple.	Gimbernat's ligament was incised and the neck of the sac ligatured.	Do.
6	36	M.	Liverpool Royal Infirmary, June 25th, 1893.	—	Right inguinal.	3 days.	About 4 inches of bowel.	Dark purple.	The sac was ligatured (funicular process).	Do.
7	61	F.	Liverpool Royal Infirmary, July 28th, 1893.	—	Left femoral.	Obstructed, going on to strangulation, 1 week.	Knuckle of bowel, mass of omentum.	Dark purple.	Gimbernat's ligament was nicked. The neck of the sac was ligatured and omentum removed.	Do.
8	78	F.	Private house, Oct. 20th, 1893.	Mr. Laing, Burscough.	Left femoral.	2 days.	Knuckle of bowel, flakes of lymph.	Dark purple.	Reduced without incision of the neck; ligature of the sac.	Do.
9	30	F.	Liverpool Royal Infirmary, Oct. 28th, 1893.	—	Left femoral.	—	5 inches bowel and adherent omentum.	Dark purple.	Removal of omentum.	Do.
10	43	M.	Liverpool Royal Infirmary, April 14th, 1894.	—	Umbilical.	2 days.	4 inches small gut and omentum.	Dark purple.	1 lb. of omentum removed; neck of sac tied.	Do.
11	34	M.	Liverpool Royal Infirmary, April 23rd, 1894.	—	Right inguinal.	10 hours.	—	—	—	Do.
12	58	F.	Liverpool Royal Infirmary, April 12th, 1894.	—	Left femoral.	24 hours.	2½ inches of intestine and omentum.	Dark purple.	Removal of omentum; ligature of the neck.	Do.
13	39	M.	Liverpool Royal Infirmary, April 29th, 1894.	Mr. Dunn.	Right inguinal.	12 hours.	3 inches of intestine.	Dark purple.	Macewen's radical cure.	Do.
14	52	F.	Liverpool Royal Infirmary, May 6th, 1894.	—	Left femoral.	2 days.	Omentum only, with 3 blood cysts (simulated bowel).	—	3¾ oz. of omentum removed; adherent around two-thirds of the orifice.	Do.
15	53	F.	Liverpool Royal Infirmary, Oct. 8th, 1894.	—	Umbilical.	3 days.	Loop of large bowel, omentum.	Odorous but shiny, omentum sloughy.	Portion of the sac removed; sloughy cellular tissue of abdomen suppurating, constriction divided, omentum removed, sac tied.	Do.
16	52	F.	Liverpool Royal Infirmary, Dec. 3rd, 1894.	—	Umbilical.	5 days.	Loop of bowel and omentum.	Dark purple.	Operation rapidly performed; bowel pushed back.	Died same night.
17	56	M.	Liverpool Royal Infirmary, Dec. 9th, 1894.	—	Left inguinal.	12 hours.	Congenital sac, large loop of bowel.	Dark purple.	Tunica vaginalis made and sutured for testicle. Macewen's radical cure.	Cured.
18	45	F.	Liverpool Royal Infirmary, Jan. 14th, 1895.	Dr. McGibbon.	Left inguinal.	2 days.	Omentum only.	—	Large amount of inflamed extra-peritoneal fat removed; sac treated *à la* Macewen; tag of omentum removed.	Do.
19	50	F.	Private House, March 8th, 1895.	Mr. Laing, Burscough.	Right inguinal.	12 hours.	Knuckle of bowel and tag of omentum adherent to sac.	Dark claret.	Omentum removed; neck of sac ligatured.	Do.
20	76	M.	Private House, June 16th, 1895.	Mr. Caregan, Ormskirk.	Left inguinal.	2 days.	Knuckle of bowel; sloughly omentum; stinking blood-stained serum.	Dark purple, shiny.	Omentum was removed; the sac was well purified; ligature around neck; one suture in skin.	Do.
21	64	F.	Liverpool Royal Infirmary, June 30th, 1895.	Dr. Samuels.	Right femoral and left femoral.	Left; 24 hours.	Knuckle of bowel.	Dark purple.	Gimbernat's ligament was nicked; Macewen's radical cure; right hernia chiefly extra-peritoneal fat; nothing in sac.	Do.
22	46	F.	Liverpool Royal Infirmary, Sept., 1895.	Dr. Mercer, Ditton.	Right femoral.	10 hours.	3 inches of bowel adherent to omentum, bloodstained fluid.	Dark purple.	Gimbernat's ligament was nicked; Macewen's radical cure.	Do.
23	58	M.	Liverpool Royal Infirmary, Sept. 26th, 1895.	Dr. Blackledge, Tuebrook.	Right inguinal.	2 days.	2 loops of about 8 inches each, 1 loop twisted and strangulated.	Dark purple.	Macewen's radical cure.	Do.

TWENTY-FIVE CONSECUTIVE CASES OF STRANGULATED HERNIA—*Continued.*

No.	Age.	Sex.	Where operated, and date.	Doctor's case.	Variety of hernia.	Strangulated time.	Contents of sac.	Condition of bowel.	Details of operation.	Result.
24	38	F.	Liverpool Royal Infirmary, Sept. 29th, 1895.	—	Umbilical.	25 hours.	Large loop of small bowel with omental sac.	Dark purple.	Omentum was dissected away off sac; ligatured vessel by vessel; the sac was ligatured.	Cured.
25	59	M.	Liverpool Royal Infirmary, Oct. 21st, 1895.	Mr. Dudgeon.	Right inguinal through internal ring.	24 hours.	Loop of bowel; large hernia of bladder through back wall of inguinal canal into scrotum, adherent to sac of hernia of bowel.	Dark purple.	Macewen's radical cure on sac of hernia; the bladder was replaced.	Do.

REMARKS.—Case 1: Slight recurrence of the hernia 6 months afterwards. The patient was a chronic bronchitic, and uses a light truss now (1896). Case 2: The notes of this case are mislaid. Case 3: All the symptoms were relieved, and the patient took food. He had an enlarged prostate, cystitis, and incontinence, also ammoniacal urine requiring frequent catheterising. He died on the 6th day from coma (uræmia). The wound was clean. Case 9: Slight recurrence of hernia in April, 1894; controlled by light truss. Case 10: The man was deeply cyanotic from bronchitis. Only a smell of chloroform was given to dull sensation for the skin incision. He was fully awake and talking with us during the remainder of the operation. Case 11: The notes of this case are mislaid. Case 12: 3 weeks after operation suffered from attacks of colic, which yielded to starvation and opium. Case 14: Omental hernia with marked strangulation symptoms. Case 15: Recovered with fæcal fistula; 6 months later after failure of attempt to remove the "spur" Murphy's button was used, but the patient died from shock of the operation the same night. Case 18: Patient had feculent vomiting for 24 hours before admission; her pulse could hardly be felt the collapse was so marked, but it was considered advisable to attempt the operation. Case 17: Troublesome bronchitis. Case 18: Although no bowel was found during the operation, there had been absolute constipation and incessant vomiting for the 2 days. Case 20: The wound was left practically open. The patient was so ill from bronchitis that he could not lie down, he was in a semi-sitting position and only partially placed under chloroform. Six months later he died suddenly while out walking. Case 21: Left hernia only strangulated, but the existence of an irreducible lump on the right side necessitated its exploration. Case 22: On the third day there was some distension of the abdomen and tenderness which yielded to saline purge. Case 25: The bladder hernia was as large as a fist and surrounded by a layer of cellular tissue which formed a sac for it and which was ligatured in a bunch after reducing the bladder which had been emptied through a puncture; this puncture was closed by two rows of Lembert sutures.

In the above table 25 cases of strangulated hernia are given:—In Nos. 14 and 18 omentum only was found in the sac. Males: Inguinal right, 8; inguinal left, 3; and umbilical, 1. Females: Femoral left, 7; femoral right, 2; inguinal right, 1; inguinal left, 1; and umbilical, 3. The ages of the males were 26, 30, 34, 36, 39, 43, 55, 58, 58, 59, 76, and 76 respectively, and those of the females 30, 38, 45, 46, 50, 52, 52, 53, 58, 61, 64, 69, and 78 respectively. There were two deaths (one directly after operation). The first was from cystitis, nephritis, and coma on the sixth day; he had been troubled with enlarged prostate for years; the bowel symptoms had been entirely relieved and the wound was healthy; this patient was a male aged 76 years (No. 3). The other was from collapse; the patient was in such a desperate condition that allowing her to die unrelieved was thought of; this patient was a female aged 52 years (No. 16). No. 15, a female, died six months afterwards from an attempt to repair a fæcal fistula.

was suffering from severe vomiting and pain, there being an irreducible swelling in the right groin and scrotum. On exposing the swelling it was found to consist of two parts: (1) a smaller, evidently escaping through the internal abdominal ring: this was opened and found to contain a knuckle of acutely nipped bowel, which was reduced and the sac treated *à la* Macewen; and (2) a larger, the size of a man's fist, which occupied the scrotum and the lower half of the canal; it evidently contained fluid: this was explored by making a tiny puncture, when out shot ammoniacal urine. It was therefore apparent that a portion of the urinary bladder had herniated. The edges of the puncture were at once clamped, a catheter passed per urethram, and the bladder and this pouch emptied. There was now seen a thin sheet of fibrous tissue stretched over the bladder hernia which was continuous with the back wall of the inguinal canal. It was dissected up and a finger passed between it and the bladder wall into the abdominal cavity and pelvis to separate tissues and prepare a place for it. This portion of bladder had no peritoneum over it and had escaped through the usual place of a direct inguinal hernia, quite three-quarters of an inch to the inner side of the internal abdominal ring. The sides of the puncture were closed by two rows of Lembert sutures, and after some manipulation the portion of bladder returned, the fibrous sac covering which was ligatured flush with the posterior wall of the inguinal canal. The wound suppurated as before mentioned and a slough formed, which was treated by rubbing with pure carbolic acid; after this the case ran an uninterrupted course.

Treatment of cases after operation.—After the first 2 cases morphia (or opium) was not allowed. This drug, although useful for relieving pain, acts directly on the intestinal wall, paralysing it, and thus preventing the bowel acting and relieving itself of flatus and "banked-up" contents. The routine administration of opium appears to rest on the assumption that the loop of bowel after return becomes inflamed. This is of course pure theory. Acting on the idea that if the bowel is fit to return it may be left absolutely to nature unhampered by any "paralyser," I have had no reason to regret it. In only one case (No. 22) did the patient complain of pain, which came on the third day, accompanied by distension and tenderness of the abdomen. This yielded at once to the action of a smart saline purge. Complications that may arise, such as peritonitis, enteritis, and persistence of strangulation, will be materially masked by opium, which eases pain, prevents diarrhœa and vomiting, and causes distension of the abdomen.

Diet.—For the first twenty-four hours sips of warm water only, ice being prohibited, for patients and nurses say that enough ice cannot be given to quench thirst; this is probably due to the dryness and hardness of the tongue produced by the abstraction of heat to melt the ice. If flatus be not passed by the end of this time the same starvation is indulged in until it does. After the passage of flatus half a pint of beef tea is granted during the next twenty-four hours; then, if all goes well, half a pint of milk is added the next day, increased by half a pint daily until two pints of milk and half a pint of beef-tea are reached, generally by the sixth or seventh day. The patients are kept on this until the bowels act. If by the ninth or tenth day no action of the bowels has taken place a dose of compound liquorice powder is given (sometimes an enema). The diet is now increased by the addition of fish, then beef tea, and, some of the milk being discontinued, chicken and a chop on successive days, and generally, unless any contra-indication, common diet by the end of the second week. The cases that recovered were all kept in bed for six weeks to allow of a firm cicatrix forming. In some of the older patients, particularly when much collapsed, a teaspoonful of brandy in a little warm water was given every hour for the first day, and continued if considered necessary in modified doses.

Results.—One patient died the night of the operation, and Case 16 from collapse. She had a large strangulated umbilical hernia, and was so reduced from fæcal vomiting that her pulse was hardly perceptible at the wrist; still, it was not considered right to allow an individual to die with bowel unrelieved. The operation lasted only a few minutes; there was no attempt at radical cure, merely two sutures passed through the skin and sac to close the aperture. Case 3, a man aged seventy-six years, died on the sixth day from coma gradually coming on from kidney mischief. He had enlarged prostate and cystitis with ammoniacal urine, and needed frequent catheterising. The bowel symptoms were all relieved. He was partaking freely of milk. The wound was healthy. With the usual leniency accorded to operators, this death not being counted, we can, I think, fairly place the mortality as 1 out of 25 cases—fortunately a very low figure when it is remembered that 6 were over sixty years of age (3 over

seventy years). I conclude with the belief that the prompt recognition of the condition and early operation, without the old-fashioned savage attempts at taxis (10 of the cases were operated upon within twenty-four hours), had much to do with the low mortality. When the operation is undertaken, rapidity, thorough antiseptic cleansing of the sac contents, no undue delay over so-called radical cure, and judicious starvation without opium can be relied upon to keep the deaths down to a small percentage.

Liverpool.

VENTRO-HYSTEROPEXY.

BY J. O'CONNOR, M.A., M.D., B.CH., T.C. DUB.
SENIOR MEDICAL OFFICER, BRITISH HOSPITAL, BUENOS AYRES.

DURING the past twelve months I have performed abdominal fixation of the uterus for prolapse eight times, and I wish to bring more fully under the notice of the profession the ease and certainty with which this operation may be executed, also the advantages of fibro-serous approximation, so ably advocated by Mr. Greig Smith. Quite recently I had an opportunity of realising the danger in anyone attempting to fix the uterus to the anterior parietes without opening the abdominal cavity. I particularly refer to a method of intra-uterine ventro-fixation recommended by Mr. Shober. On opening the peritoneal cavity, the omentum covered anteriorly the lower abdominal viscera in all directions, notwithstanding the fact that my two-inch incision extended to within half an inch of the pubes. If I had attempted to fix the uterus by a needle passed through the womb without opening the peritoneum, I certainly would have included the omentum; therefore with this experience—and I have seen the same in other cases—I have strong objections to working in the dark. In each of the eight cases there has not been the slightest post-operative complication; all united by first intention, in no instance did the temperature exceed 100° F., and no recurrence of the trouble has been reported, and, although I never order an abdominal belt to be worn afterwards, no ventral hernia has occurred. To my mind the latter mishap is due to deficient care in suturing the parietal wound. Of course a short period only has elapsed, therefore these latter observations can only be tentative. In a way I feel thankful that I have not as yet been afforded the opportunity of examining the class of adhesion that takes place, nor have any of my patients, so far as I know, tested the same by becoming pregnant. As some of them are young doubtless the test will be applied.

The operation is carried out as follows: The patient, having been "acclimatised" to hospital life for a fortnight, during which time sundry repairs are undertaken—curetting the endometrium, excision of the cervix, and colpo-perineorraphy, the bowels, if necessary, being well cleared out with repeated doses of magnesium sulphate—the day before the operation the pubic hair is shaved off and the skin of the abdomen scrubbed with soda, soap, and hot water, then washed with turpentine, and a large piece of lint soaked in a 1 in 500 solution of corrosive sublimate applied and fixed on for the night by antiseptic wool and a bandage. On the morning of the operation a large soap and water enema is given, and immediately before the patient is brought into the operating-room the urine is drawn off. The patient having been chloroformed the night's dressing is removed and the skin all round the field of operation is again scrubbed with a sponge soaked in turpentine and lastly thoroughly washed with Watson Cheyne's strong solution:—1. An incision two inches in length is made in the median line and extending to within half an inch of the pubes. All bleeding must be stopped before the peritoneum is picked up with a pair of dissecting forceps and opened: a few pressure forceps are attached to the cut edges of the peritoneum—these help greatly in after manipulations. 2. The left index-finger is passed down below the intestines and omentum to the uterus, with palmar surface, hooking the former upwards. With the tip of the finger steadied on the womb I pass down a Muzeux forceps on the dorsal aspect of the finger, seize the uterus, and pull it up to the wound. 3. An assistant now takes hold of the forceps and the presenting surface is scarified with the point of a scalpel; some trifling oozing takes place, which is easily arrested by sponge pressure. 4. At the lower angle of the wound a curved needle threaded with silk is passed from without inwards through the rectus muscle and transversalis fascia. The peritoneum being retracted by pressure forceps (previously applied) the needle is then passed for at least a quarter of an inch in depth into the uterus and made to emerge about half an inch from the point of entry. The peritoneum on the opposite side is next held back while the needle is passed from within outwards through the transversalis fascia and rectus muscle. In this manner three sutures at intervals of a third of an inch are inserted. Any bleeding from the needle punctures is arrested by sponge pressure. 5. The peritoneum is again held back on each side and these sutures are tied firmly and the ends cut off. (Care must be taken not to tie too tightly lest the silk sutures should cut through the uterus; firm approximation is all that is necessary.) In this manner the serous covering of the uterus is brought into intimate connexion with the transversalis fascia and recti muscles for half an inch in width and one inch in length. 6. Before closing the upper inch of the wound it is desirable to pass a small sponge held by torsion forceps into the peritoneal cavity in order to remove any blood or clot that may be present. The peritoneum is next closed by a continuous fine silk suture. It is well to pass the first stitch through the peritoneum on the side next the operator, then through the uterus, and, lastly, through the peritoneum on the opposite side. In this way the peritoneum is brought into accurate apposition with the serous coat of the uterus and prevents a subsequent site for ventral hernia. The recti muscles in the upper portion of the wound are then brought together by another continuous fine silk suture and the skin wound closed in the same manner. Iodoform gauze is applied. The first dressing is removed on the eighth day and the suture on the twelfth day. The patient is allowed out of bed on the fourteenth day.

There is one essential in the closure of this or any abdominal wound, and that is that no pocket must be left for the accumulation of serum or blood, for where these factors are thither staphylococci and other micro-organisms gather together—nay, more, thrive.

Buenos Ayres.

A CASE OF AXIAL ROTATION OF THE TESTIS.

BY ALFRED SHEEN, M.D. ST. AND.,
SENIOR SURGEON TO THE CARDIFF INFIRMARY.

A YOUTH aged eighteen years jumped over a hedge after a tennis-ball on July 5th, 1895, but felt no ill-effect at the time. On the 6th at 3 A.M. he awoke with severe pain and swelling in the testicle, it being all right when he went to bed. I saw him on the 9th in consultation, when the testicle was found to be considerably enlarged and somewhat tender. The temperature was normal although it had been up to 103° F. I advised immediate incision into the tunica vaginalis to relieve tension, and this was done at the Private Hospital at Cardiff on the 11th. On operation I found a dark-red mass like blood-clot, but not removable, and the testicle was swollen to the size of a small orange, globular in shape. All antiseptic precautions were carried out. The case pursued an aseptic course, the temperature being normal throughout. The stitches, however, gave way and a hernia of the testis resulted; there was no pain. The dead tissue was dry and was cut away with scissors. There was no sensation, common or testicular. It was obvious that the testicle was useless and it was removed on Aug. 9th; on the 20th the wound was dressed for the first time and the stitches were removed, the parts being nearly healed. The patient got up for a time day by day, was out for the first time on the 28th, and went home to London about the middle of September.

The specimen was sent up to the Clinical Research Association and they returned the following report:—"The specimen is an example of that rare condition described as *torsion of the testis*. The substance of the body of the testicle is healthy in itself; there are no signs of chronic inflammation, syphilis, or tubercle. Section of the epididymis shows an abundant extravasation of blood into its tissue, but there is no other lesion. This hæmorrhagic infiltration is due to twisting of the spermatic cord and

vessels (the result of injury) and gives rise to acute swelling and pain so that the cases have been mistaken for herniæ."

There was no question of hernia in this case. My diagnosis was hæmorrhagic orchitis. I had never seen a case of axial rotation, and that possibility did not present itself to my mind. Had the condition been recognised when first seen the cord might perhaps have been untwisted, as was successfully done in a case which is recorded by Mr. G. Nash.[1] A year or two ago Mr. Edmund Owen read a paper dealing with this subject. At a meeting of the Medical Society of London[2] he brought together references to fourteen cases which have been recognised during the past few years, and said that, as a rule, "it is only the unhappy possessor of an undescended testicle that gets into this very peculiar kind of trouble. It is almost as if nature herself, disappointed with her imperfect work, was anxious to cast it down a Tarpeian rock." Mr. Bryant, in reporting a case, surmises that certain cases of atrophied testicle have been examples of axial rotation, the nature of which has been originally overlooked. Twisting the cord in the lower animals is the French method of producing atrophy of the testes and sterility.

Cardiff.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

GUY'S HOSPITAL.

A CASE OF MALIGNANT STRICTURE OF THE ŒSOPHAGUS; PERFORATION OF THE AORTA; DEATH FROM HÆMORRHAGE.

(Under the care of Dr. FREDERICK TAYLOR.)

IT is, happily, rare to find a carcinomatous ulceration of the œsophagus perforating the walls of an artery of large size; it is still more rare to find it perforating the aorta. In the references given by Dr. Taylor in his paper in the Guy's Hospital Reports the investigations of Altmann in perforation of the thoracic aorta from the œsophagus are detailed. The comparative rarity of the occurrence is shown, as it happened only four times in 6886 cases, a percentage of 0·058. In 38 instances death was due to hæmorrhage, in only 12 of these was the wall of the artery invaded by cancerous growth and the aorta was involved in only 4. It is not possible to say whether epithelioma is more likely to penetrate than other forms of growth or not, as the microscopic examination is not given in every instance. We have published in our columns[3] the notes of a case of perforation in a female lunatic where there were no symptoms of the presence of a growth manifested until the vomiting of about two ounces of blood. Afterwards the patient swallowed the blood and large quantities were passed per anum. The fatal ending does not seem in any case to have been induced by the passing of bougies or tubes. For the notes of the case we are indebted to Dr. L. A. Parry, house physician.

A man aged fifty-two years was admitted into Guy's Hospital under Dr. Taylor on Feb. 20th, 1895, for difficulty in swallowing. His family and previous history have no bearing on the case. His present illness dated from November, 1894—that is, about four months—and commenced with dull, aching pain in the lumbar and interscapular regions and frequent attacks of heartburn. In December, 1894, he began to have difficulty in swallowing, at first solids, then liquids; the food he got down into his œsophagus he quickly regurgitated; the dysphagia rapidly became worse, he lost a great deal of flesh, and he was admitted into the hospital on Feb 20th. He was then unable to swallow any solid food, and liquids only with effort. A medium-sized bougie met with definite obstruction thirteen inches from the teeth (seven inches down the œsophagus), but a small one was passed through the stricture right into the stomach. It was felt to hitch half way, and it was therefore thought that a pouch was present into which it had slipped. The patient was fed daily by means of a tube and on March 22nd an attempt was made to pass a Symonds's short tube. However, this could not be accomplished, and Mr. Symonds, thinking the cause of failure was probably due to the stricture being sinuous, suggested passing an ordinary feeding-tube and allowing that to remain *in situ* for thirty-six hours, thus hoping to straighten the stricture. This was done and the short tube (Symonds's No. 12, 6 in.) was then placed in position without any difficulty. The patient was able to swallow liquids freely and easily, the tube was not touched, and all went well till April 4th, eleven days later, when the patient suddenly collapsed, became very pale, brought up a large quantity of blood, and died in a few minutes.

Necropsy.—This was made by Dr. J. H. Bryant. There was found to be recent pleurisy at the right base and there were some old pleuritic adhesions over the front of the right lung; both lungs were emphysematous. There was a patch of septic broncho-pneumonia in the right lung, which was adjacent to the œsophageal growth, the bronchial glands were enlarged from deposit of secondary growth, and there were some patches of early atheroma in the ascending aorta. Seven inches from the commencement of the œsophagus was a carcinomatous growth which involved two and a quarter inches of the length of the tube; it was hard and had thickened the wall of the tube. The internal surface of the growth was ragged and ulcerated and the ulceration had extended through the coats of the aorta two and a quarter inches from the commencement of the descending aorta. The œsophagus was dilated above the stricture and the walls were thickened; in the mucous membrane at the upper part there were a few nodules of secondary growth. The stomach was distended and filled with a large blood clot.

Remarks by Dr. FREDERICK TAYLOR.—The above rapid termination of cancer of the œsophagus is sufficiently rare to make a case of its occurrence worthy of record. In 1885 I had a similar instance under my care which I published among some cases of malignant disease of the chest and abdomen,[4] and I took the opportunity of referring to eight other recorded cases. On May 20th, 1895, Stadelmann reported to the Berlin Society of Internal Medicine two cases of carcinoma of the œsophagus opening into the aorta; and at the same meeting Professor Ewald stated that in from forty to fifty cases of carcinoma of the œsophagus he had only known one to perforate the aorta.[5] Little, if at all, do the symptoms of cases differ from others of œsophageal cancer before the occurrence of the fatal hæmorrhage, but in a few there have been preliminary bleedings described as vomiting of blood. Generally the event is quite unforeseen. In most of the cases alluded to in my paper the opening in the aorta was in the lower part of the arch or the upper half of the thoracic aorta; in Stadelmann's two cases the cancers were situated respectively four inches and six inches above the cardiac orifice of the stomach. Any successful or even palliative treatment is, of course, out of the question.

GENERAL HOSPITAL, BIRMINGHAM.

A CASE OF INTRA-PERITONEAL RUPTURE OF THE URINARY BLADDER IN A WOMAN SUCCESSFULLY TREATED BY ABDOMINAL SECTION AND SUTURE.

(Under the care of Mr. GEORGE HEATON.)

THERE is at the present time no doubt as to the treatment required for intra-peritoneal rupture of the bladder due to injury. The rent should always be sutured and the peritoneum cleansed, provided it be possible to carry out the necessary procedure. The two conditions which are most likely to prevent a surgeon from adhering to this rule are excessive nervous shock and a hopeless state of the patient from urinary infiltration or as the result of peritonitis. Blum operated successfully on a patient forty hours after the accident, and healthy urine may remain in contact with peritoneum for some days without exciting fatal peritonitis, but success is most likely to be attained if operation be performed soon after the infliction of the damage, inability to make a diagnosis alone justifying delay. One of the most

[1] Brit. Med. Jour., April 9th, 1893.
[2] THE LANCET, Nov. 18th, 1893.
[3] THE LANCET, March 20th, 1886.

[4] Guy's Hospital Reports, vol. xlix., 1892, p. 123.
[5] The Medical Week, May 29th, 1895, p. 253.

important contributions to our literature on intra-peritoneal rupture of the bladder, that by Le Sieur,[1] contains a summary of 34 cases which had been submitted to operation. Of these, 14 recovered and 20 died, but we may expect a much better record in the future. It is probable that one of the chief difficulties in making a diagnosis has been met with because it is not recognised that the symptoms vary greatly in different cases, according to the nature of the injury, the condition of the bladder at the moment when the rupture occurred, the size and age of the patient, and the time which has elapsed since the injury was inflicted. Then, again, intra-peritoneal rupture of the bladder is known to be a very fatal injury, and it is difficult sometimes to understand that the healthy-looking patient who has walked up to the hospital and complains of inability to pass urine and a constant desire to micturate, is suffering from a ruptured bladder. Yet it may be so. Shock is one of the most fallacious signs in abdominal injury, and no reliance can be placed on the complete absence of discolouration of the skin. Rupture of any of the abdominal contents may be found without evidence of contusion of the parietes. Reliance must be placed on the history of the case, the result of examination of the abdomen, and the passage of a catheter. These points are well exemplified in the following case. For the clinical notes of the case we are indebted to Mr. S. Gill, house surgeon.

A housewife aged twenty-eight years was admitted into the General Hospital, Birmingham, on Aug. 19th, 1895, suffering from abdominal pain and inability to pass urine, the result of an accident. About 10 P.M. the previous evening she was "romping" with her husband in the sitting-room when he tripped and fell heavily on her. She was at the time lying on her back on the floor of the room, and he fell across her abdomen. She was at once seized with a severe burning pain in the lower part of the abdomen and had a severe attack of vomiting. With the pain she had a great desire to micturate, but found that she was quite unable to do so. A medical man was summoned and passed a soft catheter, drawing off a quantity of urine deeply stained with blood. The removal of the urine by the catheter relieved the straining efforts at micturition, but the pain gradually extended all over the abdomen and the vomiting continued at frequent intervals all that night. The patient had passed urine two hours before the accident occurred. She had an infant twelve months old whom she was still nursing. On admission into the hospital at 10 A.M. she complained of much abdominal pain and an intense desire to micturate. She was not actually sick, but complained much of nausea. The abdominal facies was well marked. There was much tenderness all over the abdomen, but chiefly in the hypogastrium and the right iliac region. Abdominal respiratory movements were absent in the lower half of the abdomen. There was some dulness in the left flank, but the right flank was resonant and the dulness did not alter with change of position. There was much muscular resistance to palpation in the hypogastrium. The temperature was 100° F. and the pulse 84, small and wiry. A soft catheter was passed and four ounces of urine deeply blood-stained were drawn off. At 1 P.M. Mr. Heaton passed a large silver catheter. This could be passed its entire length without meeting any resistance and could be plainly felt high up in the abdominal cavity beneath the abdominal wall. No urine appeared until it was withdrawn within three inches of its end, when four ounces of bloody urine escaped. Mr. Heaton and Mr. Haslam (who saw the case in consultation) agreed that there was in all probability a large rupture of the urinary bladder into the peritoneal cavity and advised an abdominal section without delay. At 1.45 P.M. (that is to say, fifteen hours after the accident) the patient was removed to the operating theatre and anæsthetised with a mixture of ether and chloroform. The abdomen was opened in the middle line below the umbilicus. On opening the peritoneal cavity a large quantity of blood-stained fluid welled up and escaped. On examining the pelvic organs with the finger a large ragged opening could be felt on the upper surface of the bladder. The incision was enlarged downwards and the bladder pulled up into the wound. A rent with torn edges from which the mucous membrane protruded was then seen on its upper and posterior aspect, extending from the summit backwards and slightly to the left. It measured three and a half inches in length. Some small portions of the everted mucous membrane were cut away and the rent sutured. The finest Chinese twist silk was used for suturing. The rent was first of all closed by a row of Jobert sutures passed through the serous and muscular coats about a quarter of an inch from the side of the rent and issuing on the torn muscular surface. A large number of these were passed about an eighth of an inch apart and tied. A second row of sutures was then passed after Lembert's method, passing through the serous and muscular coats on each side of the previous row of sutures. These were in like manner inserted an eighth of an inch apart, tied, and cut short. A third row was inserted in places along the rent where the union seemed to be at all weak. Some twenty or thirty sutures were passed in all. The bladder was then distended with warm water and found to be quite water-tight. The abdominal cavity was finally flushed with large quantities of water, previously boiled, at a temperature of 110° until the washings returned quite clear. The cavity was sponged as dry as possible and the abdominal incision closed with stout Chinese silk sutures. No drainage-tube was employed. The wound was dressed with iodoform gauze and absorbent wool, and a No 11 soft red-rubber catheter was left in the bladder. The patient bore the operation, which lasted nearly one hour and a half, very well, and suffered but little from shock. She vomited once at 10 P.M. that evening and again at 5 A.M. the next day, but she slept well after having a fifth of a grain of morphia injected subcutaneously. The symptoms gradually disappeared and on Sept. 2nd the urine was free from blood. No power of voluntary micturition returned until the 11th, and a catheter was passed every six hours until then. The bladder at times would distend so as to hold as much as twenty-eight ounces and yet the patient be unable to pass any urine unaided. A small hæmatoma formed in the sheath of the left rectus muscle which somewhat delayed the final closing of the abdominal wound, but this was soundly healed on the 20th, and on the 25th she was allowed to get up. She left the hospital on Oct. 3rd wearing an abdominal belt to support the operation scar. Micturition was quite normal and painless, and she could hold her urine without difficulty for eight hours.

Remarks by Mr. HEATON.—Abdominal section and suture of the rent for rupture of the urinary bladder, an operation which was first put into practice by Mr. Alfred Willett, has now been performed successfully some fifteen times. The accident, however, is of sufficient rarity to justify the publication of every attempt made, whether successful or unsuccessful, to avert what, if left alone, is invariably a fatal issue. This case is, as far as I can ascertain, the first recorded in which the lesion has been successfully dealt with in a woman, all the successful cases hitherto reported having been in males. This is doubtless due to the extreme rarity of the accident in women. The operation was a tedious and laborious one owing to the large size of the rent and the depth from the surface of its posterior angle. The insertion of a double instead of a single row of sutures, though it adds to the length of the operation, more firmly and securely closes the rent and so lessens the risk of leakage which has been one of the commonest causes of failure afterwards. In any future case I should be disposed to use two rows of Lembert sutures rather than an inner row brought out through the torn muscular surface. The slight attack of cystitis which my patient had during convalescence I consider to be probably due to one or two of my inner row of sutures having become exposed to the contact of urine in the bladder. I must take this opportunity of acknowledging the care and attention devoted to the case by Mr S. Gill and the nurses in charge of the case, to whose efforts the successful issue was in no small part due.

[1] Archives Générales de Médecine, Paris, 1894, vol. i., p. 280.

ROYAL MICROSCOPICAL SOCIETY.—The next meeting of this society will be held on Wednesday, April 15th, at eight o'clock.

THE BRISTOL ROYAL INFIRMARY.—The annual meeting of the subscribers of the Bristol Royal Infirmary was held on March 24th, under the presidency of Mr. C. D. Cave (president and treasurer). The report showed that 3103 in-patients and 33,536 out-patients had been treated during 1895. The average daily number of in-patients was 199·3, and the cost of each was £3 4*s.* 10*d.*, the average stay in the infirmary being 23·4 days. The ordinary expenditure for the year amounted to £12,575 and the extraordinary to £2347. The balance due to the treasurer, which stood at £6962 at the end of 1894, was £8755 on Dec. 31st, 1895.

Medical Societies.

BEDFORD MEDICAL SOCIETY.

President's Address.—Diphtheria.—Exhibition of Specimens.

THE first meeting of this society was held on March 26th at the Bedford Infirmary, Dr. G. P. GOLDSMITH, the President, being in the chair.

The PRESIDENT, in his opening address, described the objects of the society and laid stress on the advantages to be derived by members from a society whose chief objects are the reading of cases and exhibition of specimens.

The President read a paper on Acromegaly and showed a woman aged thirty suffering from this disease. For two years she had suffered from amenorrhœa and had noticed a gradual enlargement of her hands and feet. The lower jaw was also enlarged and there was marked exophthalmos. There was no headache or evident affection of vision. The skin was usually clammy. There was no apparent affection of the thyroid gland.

Dr. WILLMER PHILLIPS and Mr. KINSEY read notes of a severe case of Diphtheria treated by Antitoxin Injections and Tracheotomy and showed the patient.

Mr. KINSEY read notes of another case of Diphtheria which recovered under antitoxin treatment.

Dr. ROWLAND COOMBS read notes of a case of Carcinoma involving the Lesser Curvature of the Stomach and the Pancreas and showed the specimen. The patient, a man aged thirty-five, had an infiltrating mass in the epigastric region, with slight fever and progressive loss of flesh. Vomiting was practically absent. There was an enlarged gland in the left groin, and post mortem the iliac, mesenteric, lumbar, and mediastinal glands were found to be enlarged. The liver was not affected.

The following specimens were shown :—

Dr. COOMBS: Kidneys and Heart from a case of Chronic Nephritis.

Mr. COLBY SHARPIN: Periosteal Sarcoma of the Lower End of the Femur through which a fracture had occurred from a slight cause.

Dr. HARVEY GOLDSMITH: (1) Heart with extensive Calcification of the Mitral Valves; (2) Brain with Symmetrical Tumours of the Frontal Lobes; and (3) Two Spinal Cords showing Ascending Degeneration.

Mr. KINSEY: Carcinoma of the Rectum.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—The Possible Dangers of treating Extensive Burns with Boracic Ointment.—Hæmorrhagic Salpingitis.

A MEETING of this society was held on March 12th, the President, Dr. PORTER, being in the chair.

Dr. MAUNSELL (Rotherham) showed three patients (who were related) suffering from Congenital Onychatrophia and other malformations of the fingers and toes. A detailed family history was given, tracing back the abnormalities through several generations.

Mr. CUFF showed a Larynx embedded in the substance of the arytenoid muscle of which was a circumscribed, non-encapsuled Tumour. The growth, which was about the size of a pea, was of a greyish pink colour, and that part abutting upon the arytenoid cartilage was breaking down, a sinus leading from the posterior end of the laryngeal sacculus directly backwards into this softened tissue, at the bottom of which was the exposed and bare cartilage. The tumour was believed to be a gumma. The patient, who had had syphilis and also later ague in India, came under treatment for splenic anæmia. Œdema of the larynx supervened. On laryngoscopic examination great tumefaction and redness of the whole glottis were revealed. The swelling was more marked on the right side. On the upper surface of the epiglottis an irregular ulcer with a yellowish base and injected margin was to be observed. The diagnosis of syphilitic perichondritis was made from the history and the laryngoscopic appearances.

Dr. ARTHUR HALL read a short paper on the Possible Dangers of treating Extensive Burns with Boracic Ointment. The case which formed the text of the paper was one of a boy who was admitted, with extensive burns, into the Sheffield Royal Hospital under the care of Dr. Sinclair White. He was treated as usual with unguentum boracis. On the fifth day he developed an extensive erythematous eruption over the limbs, trunk, and face, for which Dr. Hall was asked to see him. During the next few days he gradually became worse and died on the ninth day. At the necropsy nothing was found to account for death, and previously to the eruption the boy was doing very well. There were no throat symptoms whatever; there was delirium at night; the rash developed more each day. Dr. Hall quoted many recorded cases of similar groups of symptoms occurring definitely from boracic acid poisoning, and pointed out that the extent of surface for possible absorption was very great, and, although not pressing the connexion between the boracic acid and the symptoms, thought that if there was no connexion between the two, still the occurrence of such fatal symptoms was worthy of more extended inquiry than was at present given with a view to preventing their occurrence by a more rigid antiseptic treatment.

Dr. ANDREW WALKER read a paper on Hæmorrhagic Salpingitis, which was illustrated by numerous microscopic slides and drawings.

The PRESIDENT, Dr. RUTHERFORD, Dr. BURGESS, Mr. PYE-SMITH, Mr. EDWARD BARBER, Mr. CLYDE HAYES, Dr. ERNEST KNIGHT, and Mr. CUFF made remarks.

PLYMOUTH MEDICAL SOCIETY.

Exhibition of Cases and Specimens.

A CLINICAL meeting of this society was held on March 21st, Dr. HINGSTON, President, being in the chair.

Mr. J. MORRIS showed (1) a well-marked case of Pseudo-hypertrophic Paralysis in the second stage in a boy aged eight years, now under the care of Mr. Leah; and (2) a girl aged seven years with a Bifid Uvula.

Mr. C. E. RUSSEL RENDLE showed (1) three generations in one family, aged ten, thirty-nine, and fifty-nine years respectively, with well-marked Lamellar Cataract—he also showed the "family tree"; and (2) a Bony Plate perforated by the Central Artery of the Retina found in the choroid of an eye removed from a woman aged forty-three for panophthalmitis.

Mr. LUCY exhibited (1) an old Fracture in the outer fourth of the Right Clavicle in a male aged fifty-six years; and (2) a haulier aged thirty years with marked Prominence of each Acromial End of his Clavicles and Lax Acromio-clavicular Joints, allowing of apparent luxation of the latter.

Mr. WOOLLCOMBE exhibited (1) Photographs of a man aged fifty years whose Posterior Ulnar Ridges presented three Symmetrical Nodes (there was a history of two attacks of acute rheumatism but no peri- or endo-cardial mischief); and (2) a Slide of Tuberculous Tissue prepared and exhibited by Dr. Webber. The deposit occurred on the dorsum of the hand of a woman aged forty-five years and was found to occupy pits on either side of the head of a metacarpal bone.

Dr. PETHYBRIDGE showed (1) a Slide of Diphtheritic Membrane showing Löffler's Bacilli *in situ*, and (2) Slide of Bacteria of the Mouth.

Mr. HAMILTON showed a case of Necrosed Phalanx with Fracture of the Distal End, apparently caused by a splinter of wood which at the same time set up destructive suppuration in the finger removed.

Mr. E. SQUARE exhibited a specimen of an Eye showing Retinal Detachment and a Plate of Bone in the Choroid in a male aged fifty-five years.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.

A MEETING of this society was held on April 3rd, Mr. H. E. CLARK being in the chair.

Dr. T. K. MONRO showed a boy who had suffered from Symptoms of Intracranial Tumour, but who was now in good health except that he was almost blind as a result of optic

nerve atrophy. The knee-jerks were entirely absent. The history of severe headache, vomiting, and subsequently slight strabismus and failure of sight dated back nearly two years. The symptoms followed a fall on the forehead. There was some evidence of tubercle in the family history and in the patient himself. There was also distinct enlargement of the cervical lymphatic glands. It was suggested that the tumour was probably tuberculous and situated in the cerebellum.—Dr. Monro also showed a specimen of a Myxomatous Tumour found in the cerebellum of a man who had died, aged sixty-three years, from cancer of the pylorus, and related the history of the patient as bearing on the previous case. At sixteen years the patient had a severe illness which lasted for fully twelve months, was accompanied by pain in the head, and was followed by loss of sight in both eyes. He had been at the time of his death an inmate of the Blind Asylum for thirty-three years, and had during his residence enjoyed good health. When examined there was extreme atrophy of each disc; the gait was unaffected and the knee-jerks were normal. Post-mortem examination revealed the tumour in the left lobe of the cerebellum with atrophy of the optic nerves and chiasma.—Dr. Monro also read notes of a case of Melæna Neonatorum. The child had died on the third day after birth, and on post-mortem examination the stomach and intestines were found filled with blood. The blood appeared to have escaped from a small linear ulcer situated close to the cardiac orifice of the stomach.—Dr. WM. RUSSELL described two similar cases, in one of which, however, the patient survived.

Dr. W. K. HUNTER showed Cultures and Microscopic Specimens of a Micro-organism which he had observed in the blood of two patients suffering from Beri-beri. Inoculation experiments are to be undertaken with a view to determine whether the micro-organism is or is not the cause of the disease.

Dr. BELL TODD read notes upon the Varieties of Oil of Eucalyptus at present used in Medicine and exhibited a large number of specimens. He discussed the various botanical sources of the oils and pointed out that numerous specimens at present on the market were quite destitute of eucalyptol, though their antiseptic properties were undoubted. He had found the internal administration of the oil of value in gonorrhœa as an agreeable substitute for sandal-wood oil, &c., and he had successfully treated several cases of tape-worm by ordering oil of eucalyptus.

Dr. A. N. MCGREGOR showed the Brain and Right Lower Limb removed from the body of a boy the subject of marked unilateral hypertrophy; photographs of the patient were also exhibited. The boy at the time of his death was twelve years of age, and whilst the right lower limb had always been "weak" definite enlargement had been observed for six years. Latterly the size of the limb had caused him so much annoyance and so seriously interfered with his freedom in walking that the parents and the boy himself solicited amputation. This was decided on and the limb was amputated above the knee. The operation was attended by troublesome hæmorrhage and the boy subsequently became very excited; vomiting became troublesome and was attended by hæmatemesis, and in the end he succumbed forty-eight hours after the operation. Post-mortem examination revealed some enlargement and thickening of the optic chiasma and considerable increase in size of the right optic thalamus by a new growth the exact nature of which has yet to be determined; the pituitary body was normal in appearance. There were some evidences of tubercle in each lung, otherwise the viscera were healthy. Dr. McGregor drew attention to the special feature of the case—viz., the association of a tumour in one side of the base of the brain with a unilateral hypertrophy—and remarked upon the existence of this tumour without any symptoms pointing to its presence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

The Testing of Drinking-water for the Bacillus Coli.

A MEETING of this section was held on March 13th, Mr. CONOLLY NORMAN, President, being in the chair.

Dr. M'WEENEY gave a demonstration of Some Recent Methods of testing Drinking-water for the Bacillus Coli. When outbreaks of typhoid fever were traceable to drinking-water it was seldom that perfect demonstration of Eberth's bacillus in the water was effected, for the period of specific contamination was often at an end before the water was examined. All hygienists, however, agree that the presence of the bacillus coli possesses a high significance as affording evidence of the possibility of specific contamination. He then showed the results of three modern tests—Parietti's, Von Frendenreich's, and Abba's—which had been applied to three samples of water. Each sample consisted of half a litre of Vartry water drawn off into a clean flask forty-eight hours previously. To flask No. 1 there was added a trace of typhoid fæces obtained by once dipping a straight platinum needle into the fæces and then into the water. To flask No. 2 there was added a trace of pure culture of the bacillus coli, *var. lactis aerogenes*, from the fæces of a suckling infant. The water in flask No. 3 was left untouched. After twenty-four hours Parietti's test was performed, half a c.c. of each water being added to a series of tubes containing broth acidified with hydrochloric acid and mixed with phenol in various proportions. The tubes were then shown after twenty-four hours' incubation, when it was at once seen that those corresponding to the infected samples were turbid, whilst the uninfected were limpid and showed no signs of growth. Von Frendenreich's and Abba's methods depend on the ability of the bacillus coli to develop at blood heat in solutions containing lactose. Von Frendenreich causes this to take place in a fermentation-tube (as originally recommended by Th. Smith of Washington), and observes whether gas has accumulated in the closed side at the end of twenty-four hours. The present samples showed that one-third of the fluid in one tube (that corresponding to the typhoid sample), and nearly two-thirds in the other (the bacillus coli sample), had been expelled from the closed limb by gas. The pure sample had not evolved the smallest bubble. Abba's method consists in converting the whole sample, or one litre of it, into a nutrient solution by the addition of 100 c.c. of a concentrated solution of peptone and lactose, then adding a little phenolphthalein and imparting a rose colour with soda. After twenty-four hours' incubation the samples inoculated with the typhoid stools and the bacillus coli were completely decolourised and turbid, whilst the pure sample showed but little growth and was not in the least decolourised, as was shown by comparison with an unincubated portion. The bleaching of the two infected specimens was, of course, caused by the neutralisation of the alkali by the lactic acid developed from the fermentation of lactose by the action of the bacillus coli. All three methods yielded, on plating out the fluid, abundant colonies of bacillus coli. Whilst Parietti's method permitted only quantities under 1 c.c. to be used and Von Frendenreich's about 5 c.c., Abba's method placed the analyst in a position to detect colon bacilli in a litre of the water. Too much importance ought not, however, to be attached to the presence of small numbers of bacillus coli in water. The originally sterile intestine of the breast-fed infant comes to contain this organism in millions a few days after birth, a fact pointing to its universal diffusion through the air. It was only when present in large numbers, and associated with organic matter capable of affording it pabulum, that its presence could cause the condemnation of the water.—Dr. O'SULLIVAN asked what was the time limit of the changes diagnostic of the bacillus coli communis, for other bacilli—the diphtheria bacillus, for instance—also caused acidity of the medium in which they grew.—Dr. PARSONS pointed out that the tests were tests not for the typhoid bacillus but for the bacillus coli communis. Formerly, from a bacteriological point of view, water was considered bad which contained a great number of micro-organisms. Now, if the bacillus coli communis was present in large numbers the water was rejected, as it showed probability of the water having been contaminated. If only a few were found it was not looked upon as impure. He wished to know whether the tests they had seen would show the typhoid bacillus in the urine; also whether the bacillus coli communis was present in the urine of typhoid fever patients.—Dr. M'WEENEY, replying, said with reference to the time limit no attention should be given to any result that took over twenty-four hours to develop. It was true that other organisms made the medium acid, but they were distinguished from the bacillus coli communis by their not developing in a solution containing a large quantity of lactose. He could not, however, speak with certainty of the diphtheria bacillus. Two of the tests were not for the typhoid bacillus, but Parietti's

test reacted to both it and the bacillus coli communis, and by plating out it was easy to know which was present. He did not believe that there was an essential distinction between the typhoid bacillus and the bacillus coli communis. The four characters which distinguish them—viz., the growth on potato, the mobility, the fermentation of lactose, and the coagulation of milk — are all mutable. As regards the fermentation, however, he had only found it to occur with the colon bacillus. There are clinical facts which show that auto-infection from one's own bowels may take place, and the bacillus coli communis may set up inflammation in Peyer's patches, and toxic substances may be absorbed giving rise to symptoms the same as in typhoid fever. He did not know whether a rash would be present or not. Parietti's tests would enable the typhoid bacillus to be found in the urine, but in any catarrhal or inflammatory condition of the urinary tract the bacillus coli communis would also be present.

Reviews and Notices of Books.

Diseases of the Nose and Pharynx. By J. B. BALL, M.D. Lond., M.R.C.P. Second Edition, with 49 Illustrations. London: Baillière, Tindall, and Cox. 1894.

Diseases of the Throat, Nose, and Ear: a Clinical Manual for Students and Practitioners. By P. MCBRIDE, M.D., F.R.C.P. Edin. Second Edition, Revised and Enlarged, with Coloured Illustrations from Original Drawings. London and Edinburgh: Young J. Pentland. 1894.

A Treatise on Diseases of the Ear, including the Anatomy and Physiology of the Organ, together with the Treatment of the Affections of the Nose and Pharynx which conduce to Aural Disease. By T. MARK HOVELL, F.R.C.S. Edin., M.R.C.S. Eng. London: J. & A. Churchill. 1894. Price 18*s*.

Diseases of the Ear: a Text-book for Practitioners and Students of Medicine. By EDWARD B. DENCH, Ph.B., M.D. With 8 Coloured Plates and 152 Illustrations in the text. London: Henry Kimpton and Hirschfeld Brothers. 1895. Price 21*s*.

OF these works the books of Dr. Ball and Dr. McBride are second editions, while those of Mr. Hovell and Dr. Dench come before the profession for the first time. We propose to review them in the order of their publication. The first edition of Dr. Ball's book, published in 1890, was limited to the nose and naso-pharynx, the second includes the pharynx also. The first thirty-five pages are devoted to anatomical and physiological descriptions, and might, we think, be omitted with advantage as they are not full enough to be of real value to the student and nothing in the way of original observation has been contributed. The chapter on General Diagnosis is fairly good, but more might with advantage be added concerning palpation of the pharynx. In the chapters on Inflammatory Conditions of the Nasal Cavities the directions for treatment are concise, but the variety of methods mentioned show no accentuation—they are all put in line before the reader; very rarely does the author indicate his preference for a particular mode of treatment, and still more rarely does he give his reasons for so doing. There is, moreover, a needless subdivision of headings, as the remarks on acute and chronic naso-pharyngitis might well have been incorporated with the preceding chapters.

A clear description of adenoid vegetations is given, but under physical examination we fail to see the necessity of insisting on posterior rhinoscopy in addition to digital palpation in a well-marked case in a child. For removing the growths Dr. Ball prefers Rualt's forceps with the patient chloroformed, the head hanging down over the edge of the table and the neck not over-extended. He considers local after-treatment unnecessary.

The treatment of hay fever is fully discussed, and with regard to local measures Dr. Ball writes that "intranasal treatment is not necessarily to be discarded from consideration because no gross pathological changes are present, for since the attack is immediately determined by the application of an irritant (pollen) to the nasal mucous membrane, any treatment which has been found to destroy the irritability of the mucous membrane, such as the destruction of hyperæsthetic areas with the galvano-cautery, is rational." The author's remarks on the treatment of nasal polypi are sensible and up to date. He prefers the cold snare to the galvano-cautery. In discussing the treatment of suppuration in the antrum of Highmore we think that sufficient emphasis is not laid on the advantages of the dry method of treatment by way of an aperture made through the canine fossa. The work closes with some chapters devoted to the consideration of diseases of the pharynx, which, in view of recent advances of our knowledge in this direction, will require radical revision. The most disappointing part of the work is the illustrations. These are forty-nine in number. No less than thirty-eight of them are from instrument-makers' catalogues, and with a few typical exceptions these might be omitted. Of the remaining eleven, nine are illustrations of the anatomical portion of the work, eight of these being acknowledged copies from well-known text-books. This leaves two illustrations for the whole volume of diseases of the nose and pharynx. One of these will be found to be a copy of a diagram in Mr. Butlin's work and the other is a portrait of a boy with adenoids. In a future edition we hope the author will reproduce from his note-books at least half-a-dozen original pictures of the many morbid processes he describes. The book is well got up and of a handy size for the reader.

Dr. McBride's work is, we think, still the best before the medical public both for student and practitioner. In the matter of illustrations, compared with Dr. Ball he has gone to the other extreme and has omitted instruments altogether. We have already said that we think one type of each instrument, recommended by the author from experience, would assist a general practitioner considerably in his choice, though a good answer to this is that the illustrated catalogues of all the instrument makers are always at the disposal of any intending purchaser. The pictures in Dr. McBride's book are all original and are well reproduced, if we except one or two in the division of the work devoted to nasal diseases, upon which we remarked when criticising the first edition in 1892. Dr. McBride's strong point throughout the work is his energetic advocacy of general treatment in all the local lesions he discusses, a point so often overlooked altogether by specialists. In removing enlarged tonsils he prefers Renier's instrument, though we imagine that most surgeons are content with Mackenzie's simpler guillotine, which is so much easier to clean. In the section on Chronic Infective Diseases of the Pharynx we see no reason for describing tubercle and lupus under separate headings. The chapter on Laryngeal Phthisis is well written and the criticism of some recent methods of modern treatment judicious and not at all too severe. Dr. McBride is unable to speak decidedly as to the advisability of attempting to extirpate malignant disease of the larynx by the endo-laryngeal operation.

The chapter on the Remote Effects of Nasal Disease, with special reference to Nasal Reflex Neuroses, has been rewritten and the position taken up with regard to this difficult subject is a sound one. We agree with Dr. McBride when he says that the danger to the middle ear from the employment of the nasal douche has been over-estimated. In dealing with nasal polypi, in common with most modern rhinologists, he employs the cold steel wire snare, and as after-treatment he advises the employment of a spray of rectified spirit twice daily for a month and afterwards to repeat it on the slightest indication of "stuffiness." Dealing with

adenoid vegetations of the naso-pharynx he prefers Gottstein's curette, with the patient under chloroform and the head hanging over the edge of the table. He employs no after-treatment. In discussing the methods of examination for ear disease the author states that he has as yet seen or read nothing which has convinced him that in really doubtful cases either Weber's or Rinné's experiments can be considered of any real value. In the treatment of eczema of the meatus he recommends strongly the application of a solution of nitrate of silver in spirit of nitrous ether. With regard to aural exostosis, it is held that operative treatment is only justified when the other ear is deaf or when there are symptoms pointing to retention of pus. The chapter on acute inflammation of the middle ear is well written and the author is in accord with most authorities on the subject when he says that the insufflation of powders should not be practised in the case of small perforations of the tympanic membrane. Stacke's operation and its modifications are discussed fully, and the author states his preference for chisels and gouges for opening the bone while the burr is the better instrument for the deeper work. In discussing the subject of chronic non-suppurative inflammation he relates the operative achievements of the American and continental schools, but adds that he does not follow them in this direction beyond section of the posterior fold of the membrana tympani. We think that the attitude here taken up will be supported by the great majority of English otologists. We base our confidence in recommending this work to the general reader who requires information about the throat, nose, and ear on the facts that the book is an eminently practical one and that the directions for treatment are stated with clearness and conciseness. The arrangement and printing of the work are excellent, but it would be a great improvement if marginal references were introduced.

Mr. Mark Hovell's volume is, as the preface tells us, addressed particularly to those members of the profession who feel themselves drawn to give special attention to a department the importance of which, he regrets to say, is still only partially recognised. There are eighty-five pages devoted to anatomical and physiological remarks on the organ of hearing, and, as we have stated above, we think that readers might have referred for this information to current text-books on these subjects. The chapter upon the examination of the ear and the determination of the hearing power is well written. Mr. Hovell prefers Brunton's otoscope, believing that it gives a better view than with simpler apparatus, but we doubt if even for diagnostic purposes he will find the majority of aural surgeons at one with him on this point. He refers to Rinné's test as a means of distinguishing between affections of the middle ear and disorders of the auditory nerve, provided that it be considered in connexion with the degree of deafness as regards speech and with altered perceptive capacity for various notes. Very precise directions are given for the passage of the Eustachian catheter, and the use of Eustachian bougies is condemned, as he believes that they are capable of causing serious mischief. The chapter on Hæmatoma Auris has for its alternative heading "Vascular Tumours of the Auricle." This is surely an objectionable title, for a vascular tumour is a distinct pathological entity, an angeioma and not a hæmatoma. The chapter on Eczema of the Auricle and Meatus is well written, but it seems to us a needless task to subdivide, as of old, dermatitis of the external ear into the eczematous, the circumscribed, the diffuse, the croupous, the diphtheritic, the parasitic, and the syphilitic varieties. The account of new formations of the external ear is full and precise, but under the head of angeioma of the auricle we miss any reference to treatment by injection of carbolic acid; and in discussing the removal of exostoses, though a full account is given of various operative methods, no mention is made of the simple process of removing the exostosis by taking away the portion of the meatal wall from which it grows, a procedure far more easily accomplished than is the rule where the drill is used, as the bone of the meatus is so much softer. Some of the commoner diseases of the nose and naso-pharynx are described, and the author, in enumerating the various modes of treatment, pronounces, too strongly we think, against the use of the nasal douche. He prefers, with the majority of surgeons, to use a snare for the extraction of nasal polypi, but he is perhaps a little too severe upon those who still use the forceps. It is certain that after cocaine nasal polypi can be painlessly removed by forceps, and that surgeons who constantly practise this method acquire a tactile skill in the application of the forceps unknown to those who are not accustomed to it. Mr. Hovell prefers to perform tonsillotomy without an anæsthetic, and gives his adhesion to Mackenzie's instrument as the best. He mentions that to check hæmorrhage after tonsillotomy he has found excellent results follow rubbing firmly against the bleeding surface a hard paste made of three parts tannic acid and one part gallic acid, with a few drops of water. He recommends sucking ice or lozenges after the operation, but we would join issue with him here and prefer that the patient should avoid suction and keep the mouth open. In cases where enlarged tonsils and adenoid growths are associated Mr. Hovell prefers to remove the tonsils at a first sitting. For removal of adenoids he directs that a general anæsthetic should be administered, the patient being placed on his back with the head slightly extended, and the growth removed with a forceps which he has modified from Löwenberg's pattern. After the operation he sprays a weak antiseptic solution through the nostrils into the naso-pharynx several times daily.

In discussing the question of excision of the ossicles in chronic adhesive catarrh of the middle ear Mr. Hovell rightly doubts whether such severe measures are really justifiable while the indications for their adoption are so imperfectly defined as they are at present. He looks upon artificial perforation of the tympanic membrane as more useful for diagnostic than remedial purposes, and he refers to division of the tensor tympani as an operation of very doubtful benefit; any advantage is but slight, and its results are not infrequently mischievous. The subjects of acute and chronic suppurative inflammation of the middle ear are fully dealt with, and in the article on Persistent Perforation the author, after referring to the best of so-called artificial membranes on the market, states that, on the whole, the best substitute for the natural tympanic membrane is a cotton ball or pellet impregnated with boric acid, salicylic acid, or thymol, and then moistened with diluted glycerine.

In the treatment of aural polypi the author rightly places the removal of the cause before the removal of the polypus itself, the latter being effected by the snare and curette. In dealing with caries of the tympanic roof the method of operating devised by Stacke is described and the various methods of operating in mastoid disease are fully given. The cerebral complications of ear disease are clearly related, and the origin of general tuberculosis and tuberculous meningitis from mastoid and tympanic tuberculous deposits are supported by the observations of Dr. Barr upon these points. The work closes with chapters upon the abstruse subject of internal ear disease and with a useful article on diseases of the ear in relation to life insurance. The whole book is well got up, with large type very clearly printed. With regard to the illustrations, these are 122 in number; 19 of them are copies of anatomical plates and 71 are pictures of instruments. Of the remaining 32, 24 are original drawings by the author, chiefly of morbid conditions of the tympanic membrane and of sections of polypi. The

work is a readable and trustworthy representative of English opinion on otology.

Dr. Dench's textbook is addressed to practitioners and students of medicine and is of rather smaller size than Mr. Hovell's work. In his preface he takes up a defensive attitude with regard to his advocacy of operative procedures upon the middle ear, and suggests that the favourable outcome of his operations has depended upon a judicious selection of suitable cases. The work is illustrated by eight coloured plates and 152 illustrations in the text. Of the coloured plates those illustrating the vascular and nervous supply of the ear are ingenious and useful; the reproductions of the tympanitic membrane are particularly good, but the last two plates, intended to represent the mastoid operation and operations for intracranial complications, are crude in colour and drawing. Of the illustrations in the text 58 are pictures of instruments, 32 are anatomical drawings, and 62 illustrate the subject clinically. Of the anatomical drawings, 17 are original, and the majority of these are beautifully produced photogravures of the author's own specimens. They of themselves are an ample apology for the introduction of an anatomical section into the work. Of the clinical illustrations, no less than 54 are original, many of these being faithful reproductions of common lesions in disease of the middle and external ear. They derive additional advantage from being made of life-size and showing in section the auricle, meatus, and middle ear in the same drawing. In some cases, however, where the desire is to exhibit an operation upon the middle ear, the author would have produced a more intelligent picture if he had enlarged it. The chapter on Physical Examination is full and trustworthy. Preference is given to pure silver as the best material for a Eustachian catheter on account of the ease with which its curve can be moulded without diminishing its lumen. Under the head of Functional Examination, when discussing the value of Rinné's test, the author points out that the accumulation of clinical evidence from the investigation of a large number of cases has convinced those interested in otology that in many instances it cannot be relied upon to indicate the site of the lesion. In his efforts to be thorough Dr. Dench frequently becomes diffuse. Surely it is not necessary, when dealing with the subject of boil of the meatus, even if it be labeled "otitis externa circumscripta acuta," to devote more than eight pages to its description and diagnosis and follow with ten closely printed folios of treatment—treatment by heat and treatment by cold, with leeches natural and artificial—and then remark towards the end of all this what ought to have been stated at first—namely, that early incision is the best mode of dealing with the affection.

The same charge of unnecessary prolixity may be brought against the chapters on Diffuse External Otitis. In the treatment of the chronic form of this affection mention is made of the value of the application of boric acid and other powders to the surface, and it is added "these measures should not be trusted to the hands of the patient, but should be carried out by the surgeon, at first daily, the interval being increased as the case progresses." We cannot too strongly deprecate this advocacy of the constant attendance of the medical man, at great expense to the patient, to carry out a detail of treatment which can be quite safely entrusted to the patient himself. It is certainly not necessary for the surgeon himself to syringe away epithelial débris and insufflate boric acid every day in these cases, any more than it is wise or just so to conduct a case of furuncle in the ear that the surgeon himself must see the patient *twice* daily.

Dealing with the subject of Impacted Cerumen Dr. Dench insists that the collection should be removed at the first sitting, because the instillation of an alkaline solution with a view to soften the mass may cause it to swell and produce intense suffering from the great pressure exerted upon the walls of the meatus. The treatment of foreign bodies in the canal and of exostoses is fully described, and the recommendations are practical and good. In cases of tubal catarrh where the tube cannot be opened by inflation Dr. Dench uses a bougie, either employing a special bougie catheter or a piece of No. 5 piano wire passed through an ordinary catheter and armed at its roughened extremity with a pledget of cotton. This method of treatment which is here described without any attempt at advocacy has never found favour amongst English otologists. It appears to us that the chapters on tubal congestion and tubo-tympanic congestion might well have been included under the description of otitis media which follows. In dealing with otitis media we feel bound to call attention once more to the fact that the chapters might be reduced to one-third of their bulk without the omission of a single important fact. Chronic hypertrophic otitis media is described as to its etiology, pathology, symptomatology, diagnosis, prognosis, and treatment in twenty-two pages, and then follows chronic hyperplastic otitis media, similarly dealt with at length in fourteen more pages. Considering that if pus should be present a new affection, chronic purulent otitis media, is established, and twenty-eight further pages are devoted to this, while the results of former attacks receive, under the title of Otitis Media Purulenta Residua, a further fifteen pages, the question arises if every patch of mucous membrane in the body were similarly honoured how many volumes a work on general surgery or medicine would run to. Surely there is no essential difference between the mucous membrane of the middle ear and of other parts, and the tendencies of chronic inflammation of it are the same, whether towards simple resolution, towards chronic catarrh and repair with fibrous thickening, or towards suppuration and resulting cicatrisation. It is obviously inaccurate and unscientific to differentiate the pathological accidents on the path of cure and elevate them into separate diseases with a separate etiology and pathology.

The variations in structure of the mastoid are well described, and this is followed by a description of the course and treatment of mastoid inflammation and its results.

A separate chapter is devoted to Middle-ear Operations. It is very full, and as Dr. Dench has elsewhere fully published his results, and they have been already much criticised, we will content ourselves with adding that he is a warm advocate of these intra-tympanic measures, not only for cases where there is actual perforation with purulent discharge, but in cases with whole membrane accompanied by deafness where the hearing has failed to improve under less radical measures. He candidly tells his patients of the experimental nature of the operative measures and recommends an exploratory tympanotomy. We can only add that the good results he details have not been generally obtained in this country, in spite of a very careful selection of cases, and we venture to hope that Dr. Dench will later collect the whole of his cases, giving full details of the former condition of hearing, the nature of the operation, the after-history as to pain and discharge, and the present state of the hearing. It is only by good results recorded in such a manner that these operations can deserve to come into favour. The closing pages of the work deal with Inflammation of the Labyrinth and its Treatment, the Effect of Acute Infectious Diseases, the Various Affections which are Complicated by Aural Trouble, and Deaf-mutism. A few words at the end are devoted to Diseases of the Nose and Naso-pharynx, and these might with advantage have been a little fuller.

For removal of adenoids he prefers general anæsthesia, the head of the patient being thrown backward over the edge of the table, and the growth removed with forceps, any small masses left being swept away by the curette.

In conclusion, we may say that Dr. Dench has made a painstaking effort to place the whole subject of aural surgery before the profession, that there are many good qualities in his work, and a judicious revision of another edition, while greatly reducing its bulk, would tend in other directions to make the work a more acceptable guide for the use of the profession at large.

LIBRARY TABLE.

Annales de l'Institut Pasteur. Edited by M. E. DUCLAUX. Vol. X., No. 3. March, 1896. Paris: G. Masson.—This number contains several articles of great general interest. The first is by M. Duclaux giving the results of a very prolonged and patient research on the chemical action of sunshine at different altitudes in different states of weather and at different times of year. He employed a solution of oxalic acid for estimating the chemical change, as this solution is not acted on by thermal rays, while under the influence of light it absorbs oxygen and is converted into carbonic acid with a negligible trace of formic acid. By estimating the acidity by titration before and after exposure to light the amount of oxalic acid consumed can be accurately measured. The results showed that in wet, cloudy weather there was little chemical reaction. On the days in which there was active chemical change there was sometimes bright sunshine, but often better effects were obtained when the sky was covered with fleecy clouds. Every photographer knows that these latter days are also best for printing from negatives. M. Duclaux suggests that these variations are due to the greater quantity of aromatic oils and other odorous vapours present in the air on fine clear days and asserts that they obstruct the actinic rays. This seems to require more proof than is given in the paper. Dr. de Haan of Java gives an account of the method he has employed for obtaining abundant lymph for vaccination by inoculating heifers from the arm of the human subject. He has inoculated monkeys (Macacus sinicus) from the heifers and subsequently from one another, and obtains pustules which run an exactly similar course to those in man. He has not considered it justifiable at present to inoculate from the monkeys to children. Dr. Hankin sends a very important preliminary note on the effect that the water of the Jumna and Ganges has in destroying the cholera bacillus. Water taken from the stream, or even from a corpse that has been macerating some time in the river, destroys the bacilli in pure cultures in the course of an hour or two. Dr. Hankin believes this action to be due to the presence of certain volatile acids, for the bactericidal power of the water is destroyed by boiling or even by allowing it to filter through the soil into shallow wells. The bacilli will flourish in boiled river water. There is also a preliminary report by Dr. David Bruce on the disease caused by the tsetse fly. He believes that the fly itself does not secrete the poison, and that its bite is only harmful by conveying parasites from another animal suffering from nagana, as the disease is called. He states that nagana can also be communicated by direct inoculation from one animal to another.

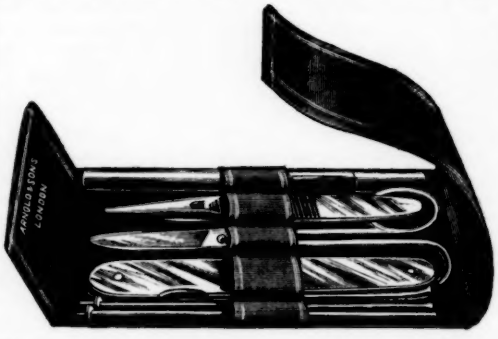
New York County Medical Association: Register of Members and Manual of Information. New York: Published by the Association. 1895.—This volume not only supplies in a clear and well-arranged form a large amount of information relative to medical organisations in the State of New York, but is practically a medical directory for the city. The association was founded in 1884, and in June, 1895, it consisted of 1056 members, whose addresses in New York, together with the description and dates of their qualifications, are published in full; a supplementary list gives the names and addresses of about 1780 well-recognised New York practitioners who are not members of the association. The main objects of the association are the maintenance of a high standard of professional ethics and the cultivation of medical and sanitary science. It is affiliated to the American Medical Association and meets every month. The secretaries are Dr. Nathan Gross Bozeman, 9, West Thirty-first-street, and Dr. P. Brynberg Porter, 150, West Eighty-fourth-street, New York, U.S.A.

No. 3 of *Architecture*, the new monthly magazine of architectural art, well maintains the excellent quality of its predecessors, being both profusely and well illustrated. The article on Westminster Abbey, No. 1 of the series on the Abbeys and Cathedrals of the World, is concluded, and the several pictures of the various parts of the historic building will doubtless be prized by many. At the moderate price of 1*s.* per month the magazine deserves well of all interested in architectural art. It is published at Talbot House, Arundel-street, Strand.

New Inventions.

IMPROVED POCKET CASE.

MESSRS. ARNOLD AND SONS of West Smithfield have made a pocket-case for me which has some advantages over those generally used. The ordinary case is far too bulky to be constantly carried. Most miniature cases consist of at least three thicknesses of stiffened leather with side flaps and a clumsy fastening. They do not fold well and contain instruments so small as to be practically useless. The case shown in the drawing is made of flexible morocco leather. It is four inches long, two inches wide, and about a third of an inch



thick. It contains: (1) scissors, one point sharp and the other blunt; (2) dissecting forceps, with spring catch, so as to act as artery forceps; (3) knife handle, with sharp-pointed scalpel and gum lancet; (4) probe, director, and exploring needle; (5) needles, ligatures, &c.; and (6) thermometer. The instruments are tools, not toys, being four inches long. The case can be carried in the watch pocket as constantly and with as little consciousness of its presence as an ordinary card-case.

T. H. WARD, M.D.

Paignton.

THE CHELTENHAM GENERAL HOSPITAL.—The annual meeting of the subscribers of the Cheltenham General Hospital was held on March 18th, under the presidency of Colonel Croker-King. The report showed that during 1895 the out-patients had numbered 4176, being 281 in excess of those of the previous year, and 997 in-patients had been treated, an increase of 104 compared with the number in 1894. The average daily number of in-patients was 59. The total expenses amounted to £5687, being £951 in excess of the income.

THE LANCET.

LONDON: SATURDAY, APRIL 11, 1896.

THE report issued last week by the Metropolitan Asylums Board on the results from the use of antitoxin in diphtheria shows that during the year 1895 there were 3529 cases of diphtheria treated in these six metropolitan asylum hospitals, of which 796, or 22·5 per cent., proved fatal; in 1894 the number of cases treated was 3042 and the deaths 902, showing a mortality equal to 29·6 per cent. Thus the proportional case-mortality was 7·1 per cent. lower in 1895 than in 1894. This marked decline in the mortality of hospital-treated cases of diphtheria in 1895 naturally suggests an inquiry as to the cause of the decline, and the six medical superintendents, on the ground that the average severity of the cases was, "in their opinion, about equal" in the two years, have arrived at the conclusion that the decline was due to antitoxin treatment in nearly 62 per cent. of the cases in 1895. It is true that the case-mortality of diphtheria cases treated in the Metropolitan Asylum Hospitals in the seven years, 1888–94, did not once fall below 29 per cent., whereas in 1895, when antitoxin treatment was first generally adopted, it fell to 22·5; on the other hand it should be noted that during the seven years referred to above the case-mortality almost continually fell from 59 per cent. in 1888, when the numbers were small, to 29 in 1894 when the maximum number of cases was under treatment. While, therefore, we admit that the reporters were apparently, in the absence of other known cause, justified in attributing the decline of the case-mortality from diphtheria in 1895 to antitoxin treatment, it seems but prudent to recognise the possibility of this decline being partly due to a continuance of the decline that prevailed during the seven years 1888–94 and partly to a decreased severity in the type of the disease in 1895, since it is a fact that the rate of mortality from diphtheria in London, which was 0·76 and 0·63 per 1000 of the population in 1893 and 1894, further declined to 0·53 in 1895. It is, however, undoubtedly true that the decreased proportion of diphtheria case-mortality in these hospitals in 1895 implied the recovery of 250 cases that would have been fatal had the proportional case-mortality been the same as it had been in 1894. We scarcely feel justified, however, in assuming that the whole of this saving of life was due to antitoxin, neither does any satisfactory basis appear to exist for estimating what proportion of these saved lives may be credited to this cause. The report tells us that of the 3529 cases of diphtheria treated in these hospitals in 1895 62 per cent. were treated with antitoxin, and it follows that 38 per cent. were not so treated. It might have been hoped that a comparison of the observed results in these two series of cases would have afforded a satisfactory means for testing the effect of antitoxin on the proportional case-mortality. Unfortunately, however, the carefully prepared and elaborate tables contained in the report are practically useless for this purpose. The report states that (1) antitoxin was only administered in those cases which were severe or in which the symptoms on admission were sufficiently pronounced to give rise to anxiety, and (2) that no antitoxin was administered in those cases in which the patients were moribund at the time of their admission to the hospitals. It is obvious, therefore, that the two series of cases are incomparable. How futile would be any attempt to compare the case-mortality of the cases treated with antitoxin with the case-mortality of those not so treated the following figures conclusively prove. The proportional mortality of the 2182 cases treated in these hospitals in 1895 with antitoxin was equal to 28·1 per cent.; these included, we should repeat, for the most part the severe cases, exclusive of those held to be practically moribund at the time of admission. The remaining 1347 cases, made up it would appear mainly of mild and moribund cases, showed a case mortality of only 13·4 per cent. It is needless to dwell upon such a comparison. It is impossible, however, not to regret that some other statistical method was not devised that would have thrown more light upon the result of the antitoxin treatment of diphtheria cases in these hospitals, and we venture to hope that it may yet be possible to collect and tabulate facts which will be more helpful in this direction than the report that has just been issued.

It is, however, abundantly clear that the introduction of this method of treatment has had a most marked influence in mitigating the severity of the disease, as shown by the unanimous testimony of all the reporters; and it seems also further evident that the influence for good has been proportionate to the degree to which the remedy was pushed and to the promptness of its application. We may refer, in proof of these assertions, to the somewhat striking figures relating to laryngeal diphtheria. In the first place, be it noted that extension of the membrane to the larynx after admission occurred in a much smaller proportion of cases in 1895 than in 1894, bearing out one of the prominent effects of the injection—namely, that of limiting the degree and extent of the membranous exudation. In the year 1894 there were 466 cases of laryngeal diphtheria with a case-mortality of 62 per cent.; in 1895 there were 543 such cases with a mortality of 42·3 per cent. The degree of laryngeal implication may, to a certain extent, be measured by the number subjected to tracheotomy, and we find that in 1894 there were 56 per cent. so treated; in 1895 there were 45·3 per cent. Again, the proportion of fatal cases after tracheotomy was much higher in 1894 than in 1895; for in 1894 of 261 tracheotomised subjects 164 died, or 70·4 per cent.; in 1895, of 255 tracheotomised subjects 125 died, or 49·4 per cent. There were only 13 of this latter series who did not have antitoxin. This marked improvement in the results of tracheotomy was observed at each of the hospitals, and cannot be ascribed to any accidental circumstance. The medical superintendents further report a general amelioration of the condition of the patients subjected to the antitoxin treatment, noting, among other things, that even in cases which proved ultimately fatal life was more prolonged in those so treated in each of the hospitals except one, and that one where the dose of antitoxin given was on an average much lower than that given at the other hospitals.

On the other hand, there seems to have been a larger

proportion of complications (notably albuminuria and paralysis) in the cases treated in 1895 as compared with those of 1894, a fact partly explicable, no doubt, by more careful observation, partly also by the greater proportion of recovery of severe cases. Even if it be conceded that albuminuria is more frequent after the use of antitoxin there is no evidence that actual nephritis is more common. Statistics are also given as to the number of cases in which secondary effects—such as rash, joint-pains, &c.—followed the use of antitoxin, but the general consensus is that, in spite of these results of the new treatment, the condition of those so treated contrasted favourably with those formerly observed. The importance of an early recourse to the remedy is shown in a striking manner in the supplementary report on 119 cases of post-scarlatinal diphtheria at the Northern Hospital. Antitoxin was given in 58 cases, with a mortality of 6·9 per cent.; in 12 the treatment was commenced on the first day, none died; in 27 on the second day, 2 died; 8 on the third day, none died; 1 on the fourth day, recovered; 10 on the fifth day and later, 2 deaths. Now as in all like cases occurring in the previous five years the mortality had been as high as 61·9 per cent. it is impossible to avoid the conclusion that so great a difference must be ascribed to the use of the antitoxic serum or to fail to see that as we know more of the dosage and time of its employment the beneficial effects of the remedy will become more and more evident.

IF our voluntary hospital system, with its splendid traditions, is to be preserved it is necessary that its friends should consider how best to compass that most desirable end. None can dispute its claim to the support of all classes of men. We never conceal its liability to abuse or cease to urge precautions against such abuse by shabby persons whose means do not justify their taking gratuitous advice and medicines. But when all allowance on this score has been made the voluntary hospital system of England remains a credit to its humanity that will compare favourably with the State-supported system of foreign countries. If this be true, the best friends of hospitals are those who seek to remedy their faults of administration and distribution, to make them more available for the really poor and more inaccessible to those for whom they were never intended. It is of no use to shut our eyes to the difficulties of such efforts. The hospital is the centre of prodigious forces and of strong interests. Sentiment, charity, science, medical teachers and medical students, the rich and the poor, and all the Churches without distinction of creed gather round them; and all are apt to apply numerical and statistical tests to the prosperity of the particular hospital in which they are most concerned. There has been a tendency of late years even to popularise hospitals and make them attractive. It would be ungracious not to rejoice over every real accommodation and amenity that can brighten the lot of those who are unfortunate enough to need hospitals; but we are of opinion that this is consistent with keeping them in their right place and excluding from them all wrong persons whose diseases and means are such as admit of treatment at home.

We have spoken of the voluntary hospital system. In truth, this word is a little inapplicable. The great danger of the present state of affairs is the want of system. The voluntary principle is an admirable one, but it is jealous of system. It acts locally, impulsively, and irregularly; fails here and succeeds there; it lacks control and organisation and is apt to resent them. Yet these, in truth, are its great defects, by reason of which it comes in often for more criticism than support. If certain needed qualities could be introduced into voluntary hospitals, if they could be brought to regard each other as coöperating for great charitable ends—not merely competing with each other for public subscriptions—if they could be brought to recognise some great common principles of administration, a new era of public confidence and of prosperity would be assured to them. How is this great object to be achieved? Answers to this question differ. The one most generally accepted is, "By the creation of a Central Hospital Board," on which all classes of persons who have shown interest in, or sympathy for, hospitals shall be represented: subscribers, medical officers, the medical profession, the Council of the Hospital Sunday Fund and the Council of the Hospital Saturday Fund. Such a Board was originally suggested by the Charity Organisation Society, and the Committee of the House of Lords on Hospitals adopted the suggestion almost in its entirety. It has been repeatedly urged by the society, and is again to be advocated at a meeting of the Council on April 13th at 4.30 P.M. at the Royal United Service Institution. It must be confessed that there has been no great enthusiasm shown by the public or by the hospitals with regard to this suggestion. Four years have elapsed since a Central Hospital Board was recommended by the Committee of the House of Lords after a searching investigation into the worth of the hospital system, and nothing has been done. The chief explanation of this delay is probably to be found in the jealousy of individual hospitals, particularly of those institutions the *raison d'être* of which is not very demonstrable. It is extremely desirable that those who object to such a Board should reconsider their indifference or their opposition. By such opposition they give enemies of the hospital system reason to believe that they are afraid of the very gentle control operating only through public opinion which such a Board might exercise over obvious faults in the present system, or rather want of system. We cannot think that the true friends of hospitals will be well advised if they longer resist, even by indifference, the proposal for a Central Board. Existing institutions must be accepted and can scarcely fail to benefit from the action of the Board. It would seem to be their obvious interest to combine together for the purpose of strengthening each other and strengthening that public confidence on which the support of hospitals depends. It would be one of the functions of such a Board to discourage the constant multiplication of small and feeble hospitals, which only weaken those already in existence. The constitution of the Board is a detail on which we need not here dilate. There could be no serious difficulty in the general principles to be recognised in its formation. But we impress on all friends of voluntary hospitals that they should give to this proposal most careful consideration. The Board should be formed voluntarily and without the aid of legislation. The glory of the system is the voluntary

principle; only let its supporters have the courage to see its weak points and to strengthen them. The Hospital Sunday Fund and the Hospital Saturday Fund might, by adopting a definite course of action, have rendered such a proposal unnecessary. However, their constitution is, perhaps, scarcely wide enough for these functions.

THE articles on questions of public health which periodically appear in the *Times* are of great value; they are very widely read and they deservedly carry great weight. This, however, makes it all the more important that when any such article, by reason of its alleged facts or by reason of the inferences which are certain to be drawn from its dicta, suggests that which is not strictly correct attention should be drawn to the subject and misapprehension on the part of the public be as far as practicable avoided. For this reason we find it desirable to advert to one part of an otherwise extremely interesting leading article which appeared in the *Times* on March 23rd and in which the subject dealt with was the recent Milroy Lectures delivered before the Royal College of Physicians of London. In the latter part of that article the question of the diffusion of small-pox around hospitals in which cases of that disease are aggregated was discussed; and, referring to the report of the Royal Commission on Small-pox Hospitals, 1882, the writer stated that the Commission "could only recommend that small-pox hospitals should be placed as far as might be from other habitations." We are unable to find in the report of the Commission any recommendation which seems quite to this effect, and we rather doubt whether this was the view of the Commission because they did make a definite recommendation which was exactly in the opposite direction. This was to the effect that for "400 or 500" metropolitan small-pox cases wards "might be maintained within the precincts of the fever hospitals sufficient in each hospital for thirty or forty small-pox patients," the then existing fever hospitals being known to lie in near proximity to large numbers of human habitations. And, unfortunately, this recommendation was acted on for a series of years, with the result that the small-pox infection was again diffused to the population around the hospitals, the distribution of the infection being graduated according to proximity to the hospitals in precisely the same way as had been the case before the date of the appointment of the Commission. It was, indeed, only in 1886, and subsequently therefore to the new experience to the effect that no administrative efficiency could prevent this diffusion, that the Metropolitan Asylums Board once and for all gave up the attempt to isolate small-pox anywhere within or near the metropolis.

The article to which we refer went on to say that small-pox hospitals have now been on their trial for a considerable period, and that "the mischief, if any, which they have occasioned has been of infinitely smaller amount than that which they have prevented." Clearly provincial small-pox hospitals are not here in question; otherwise such cases as the outbursts around the small-pox hospitals at Warrington, Sheffield, Leicester, &c., would have led to much more guarded language. The metropolis was in the writer's mind, and limited to the metropolis the statement is absolutely correct. But, unfortunately, the metropolitan experience has really no bearing on the subject, for the experience of London since 1886 is concerned with the almost entire absence of any small-pox hospitals, these institutions having been relegated to the provinces, where they were placed at a distance of some twenty miles from the metropolis. Under these circumstances it is very natural that London should have benefited in the matter. But the altogether altered circumstances of London since 1886 do not seem to have been apprehended, for the article goes on to refer to the metropolitan experience of small-pox during the past ten years and to say that "the small-pox which has arisen spontaneously and that which has been disseminated from the hospitals, taken together," has been only one-thirtieth of that which arose spontaneously before the hospitals were established. The statistics are of course correct in so far as the metropolis is concerned; but they have no application to the question under review. For the past ten years referred to the small-pox hospitals of the Metropolitan Asylums Board, as already explained, have not existed in or near London, and hence there has been no small-pox disseminated by them to add to that which has arisen spontaneously in the metropolis. The application of the statistical argument should have been in precisely the opposite direction, for it goes to show that when small-pox is not disseminated to the metropolis by means of hospital aggregations, then the elimination of this artificial element in the diffusion of the disease leads to an enormous diminution in our London small-pox mortality.

This view receives confirmation from the fact that in the provinces where it has not been possible to place small-pox hospitals twenty miles away from the communities using them there has been nothing like the same reduction in the rate of the small-pox mortality; the provincial rate for the same period has, indeed, only been one-fourth, instead of one-thirtieth, of that which it formerly was, and one reason for the lessened rate has been the recurring provincial experience to the effect that where authorities persist in placing small-pox hospitals within or near the borders of their sanitary areas they have again and again had outbursts of small-pox in their communities. It is also noteworthy that these outbursts have rarely been in the poorest and most densely peopled parts of the boroughs or towns concerned, but in the localities which were nearest to the small-pox hospitals.

THE report of the departmental committee, which was appointed in September, 1894, to inquire into the prevailing systems for the maintenance and administration of Poor-law schools in so far as the metropolitan area is concerned, has just been issued, and at a time when the attention of Parliament is directed to the Education Bill now on the table of the House. Its appearance is therefore opportune, seeing that it touches directly, *inter alia*, on the important matter of the education of the inmates of Poor-law institutions in a manner which happily accords with the proposed measure now before Parliament. To sum up the report of the committee in one sentence would be to say that the representative body of experts which constitute it

have arrived at a very definite conclusion as to the practical failure of Poor-law schools to meet the necessities of pauper infant life as they are seen to arise, and that they propose to bring about the requisite amelioration of the present condition of affairs by relegating to a central and newly constituted body the powers now exercised by central and local authorities—to wit, the Local Government Board and boards of guardians throughout London.

That the recommendations of the committee will have great weight we do not question, coming as they do from persons of acknowledged authority. We have only to look at the names to feel assured of this. The report is signed by the chairman, Mr. MUNDELLA, by Sir JOHN GORST, Mr. LYULPH STANLEY, the Rev. BROOKE LAMBERT, Mr. VALLANCE, Mrs. BARNETT, Mr. NETTLESHIP, F.R.C.S., and Dr. J. G. FITCH, lately chief inspector of schools under the Education Department, names which vouch for the trustworthiness of the document. We are told of fifty meetings, of seventy-three witnesses examined (including Government inspectors, guardians, school teachers, medical officers, and philanthropic experts), and of surprise visits paid by the committee here and there for the purpose of testing the normal working of the school system in individual parishes. In these and in other ways we are assured of the thoroughness of the work detailed in the report. All these facts add weight to the conclusions arrived at. Briefly, it is seen that the "barrack school" system inaugurated fifty years ago, real as was the advance made by the system at the time of its conception, has failed in many respects to recommend itself to the majority of those connected with the work. The medical witnesses have been unanimous in condemnation of the system, not only on the ground of its direct bearing on the health of the children, especially as regards the ever prevailing ophthalmic cases, but also indirectly by reason of the tendency to affect injuriously the mental, moral, and physical growth of those who have been confined to the monotonous round of the school curriculum. Not only on the youthful and involuntary inmates has this effect been noticeable, but officers and teachers have felt in large degree the dull monotony of the surroundings to which they have been more or less restricted. The depression that has resulted has had undoubted effect on the capacity of the children to act the part which is played by their colleagues placed in happier circumstances, and alike in play, in scholastic attainments, in the learning of trades or the exercise of domestic duties the school system has been abundantly proved to have had a baneful effect on those compelled to undergo its ceaseless round. Ophthalmia has become endemic despite every effort to eradicate it, and ringworm and skin complaints in general have been handed on from child to child until the sufferer chanced to be placed in one of the scattered homes, or, better still, boarded out. It is, in fact, this alternative system of "boarding out" of children in the cottage homes of reputable folk that the committee recommend as likely in a large degree to check the evils attendant on the barrack school principle. It has been demonstrated again and again, even apart altogether from the evidence adduced before the committee, that the boarding out of children has had the most beneficial results, both as regards health, physical development, capacity to grasp and retain the teachings of school life, and general mental culture. The children have by this means been removed from the association of pauper existence and have been placed in a position from which they have been grafted into the general social system fitted to their station, and have thus escaped the pauper taint which has militated to such a marked extent against the future chances of their less fortunate fellows.

We do not here touch on the educational phase of the matter, important as it is, nor do we treat of the financial aspects of the question save to state that the results of scattered homes and of boarding out are in favour of the economists; neither have we space in which to set forth the statements of the committee on such points as half-time employment, apprenticeship, and the like. We can only now refer to the specific recommendations at the end of the report. These desire the establishment of a centrally constituted body having full financial and general control of all the London institutions for Poor-law children, with a common expenses fund; the total exclusion of all children over three years of age from the association of workhouses; the gradual abandonment and immediate reduction in scope of the large school system, with increase of scattered homes, and especially an extension of the boarding-out system; the establishment of certified homes, of ophthalmic and other hospital schools, with uninterrupted education of their inmates; the special treatment of the feeble-minded in houses and voluntary homes; the provision of special schools for the tending of vagrant children; improved industrial training; the provision of training ships; the encouragement of emigration; and the appointment of an adequate inspectorial staff, including medically qualified women inspectors. In these and other ways the committee would hope to see the very desirable end accomplished of dissociating the children from pauper surroundings, so that they might take their place in the world untrammelled by their antecedents.

Annotations.

"Ne quid nimis."

THE REMUNERATION OF MEDICAL WITNESSES.

A REQUEST was sent on March 12th to Sir Matthew White Ridley, the Home Secretary, asking him to receive a deputation from the United Kingdom Police Surgeons' Association. Their wish was to confer with Sir Matthew White Ridley on two points: (1) the appointment of police surgeons in districts where none had as yet been made; and (2) the desirability of revising and increasing the scale of fees now awarded to medical witnesses in the police, sessions', and assize courts. Sir Matthew White Ridley has declined to receive the deputation on the grounds that he has already drawn the attention of such police authorities as have not yet appointed police surgeons to the desirability of doing so. With reference to the second point he observed that being fully in possession of the views of the Association he does not think it would serve any useful purpose for him to receive a deputation to discuss it further. The Home Secretary's decision is, we think, to be regretted. Since the reception of the last deputation

from this association by Mr. Asquith many assizes and sessions have been held bringing with them additional hardships upon police surgeons and other medical witnesses. Mr. Asquith freely admitted that the scale of fees framed by Sir George Grey many years ago and fixing the remuneration of medical witnesses in the sessions' and assize courts at £1 1s. per day was not an adequate one for the loss of time incurred by professional gentlemen. But he naïvely added that all his predecessors in office, although repeatedly appealed to on the subject, had declined the responsibility of revising the scale of fees and that he felt no disposition to burn his fingers. Evidently Sir Matthew White Ridley feels no more desire to go through the finger-burning process than any of his predecessors. But how much longer is this injustice to members of an honourable profession to continue? The duties of medical witnesses for the prosecution of offenders against the law are sufficiently onerous and are attended with inconveniences enough without the additional injustice of not being remunerated at all or even of being actually out of pocket. That this is no exaggeration has been repeatedly shown in THE LANCET and will probably appear again. In Scotland medical witnesses receive two guineas for each day they are cited to appear in the circuit court of the town in which they are residing and three guineas if the court is held at a distance. There are also, we believe, allowances for travelling and other expenses. Very different is the scale of fees and allowances in England and Wales. However distant the assize town or city may be the fee is the same—one guinea per diem, one railway fare there and back (not always first class), and two shillings per night! Even this last item, which was a positive insult to professional gentlemen, has, we are informed, been discontinued. We would urge all medical witnesses, whether they be police surgeons or not, to send full details of their most recent experiences at assizes, especially at a distance from their own homes, showing, on the one hand, the expenses they were compelled to incur during their absence from home, including the services of a locum-tenent, and, on the other hand, the exact amount of the inadequate remuneration they received. Members of the medical profession are proverbially long-suffering, especially on the subject of fees, but there is a limit even to their endurance and there are manifest indications that this limit has now been reached. If the authorities in England and Wales decline to remunerate medical witnesses with at least some approach to a reasonable acknowledgment of the value of their services they must not be surprised if the duties of medical witness for the Crown come to be declined by many who now undertake them.

THE PERILS OF PRACTICE.

AT the Liverpool Assizes, on March 17th, a claim was made against a medical man named Wright, practising in Wigan, for £250 damages for injuries to the plaintiff arising from his alleged negligence as a medical man. The case was heard by Mr. Justice Vaughan Williams and a special jury. The plaintiff was a club patient of the defendant, and at 5 A.M. on May 1st, 1895, was taken to his surgery with a contused wound of the right hand, in which the tissues were lacerated to the bone longitudinally over the fourth metacarpal bone for about two inches. The defendant took great pains with the treatment so as to prevent cellulitis, and the hand progressed well, but owing to some contraction of the tendons the patient's mother wished him to see another medical man. On May 31st he consulted Mr. Mitchell Roocroft, who told the patient, so the plaintiff and his witnesses said, that the bone in the hand was broken or had been broken and he would require to give him chloroform and refracture it and put it right. Mr. Roocroft treated it till early in July, when he thought the plaintiff was fit for work. The operation which the defendant proposed to perform was to break down the adhesions, but he denied that there had ever been any fracture. The hand was now a success so far as it could be after such a wound, but the action arose from the alleged negligence in failing to discover the fracture. The defence was that there never was a fracture, therefore there was no negligence. The case appeared to rest for some time on the statements of the plaintiff and his witnesses as to what this medical man said and what the defendant said in reference to the injury. Mr. Southam, surgeon to the Manchester Royal Infirmary; Mr. Robert Jones, surgeon to the Liverpool Royal Southern Hospital; Mr. Berry, senior surgeon to the Royal Albert Edward Infirmary, Wigan; and Dr. Robert Prosser White, also surgeon to the Royal Albert Edward Infirmary, all testified to the fact that there was no evidence now of there ever having been a fracture, Mr. Jones telling the jury he had never seen a fracture specimen in a museum in which some evidence had not been left of its having been a fracture. The plaintiff's advocate stated in opening the case that they could not afford to pay for medical evidence. Later, however, he announced that Mr. Roocroft was present, and the judge and jury wishing to hear him the defendant's counsel consented that he should go into the box. He stated that he found an ununited fracture, and he broke down adhesions and placed it on a splint for two or three weeks. He handed a notebook to the judge which contained notes of the case, which the judge read, and after the address of the counsel for the plaintiff he asked Mr. Roocroft when he made the entries in his book, and Mr. Roocroft replied that they were made about a week or two ago from his notes taken at the time, but his lordship observed he should like to have seen the original notes. His lordship, in summing up to the jury, said it was a very interesting case, and made the humorous remark that fortunately before he was made a judge he belonged to a profession and whether he was negligent or not no action could be brought against him. He told the jury they could decide the case without deciding whether there was a fracture or not. The question was whether the defendant treated the case skilfully and whether they were satisfied on the medical evidence that the medical man was guilty of negligence. The jury, without leaving the box, found for the defendant. This case is a very important one and shows the risks run in surgical practice. We sympathise with Mr. Wright in the annoyance and anxiety he has suffered and congratulate him on his successful defence of the action.

THE REPRESENTATION OF EDINBURGH AND ST. ANDREW'S UNIVERSITIES IN PARLIAMENT.

WE understand that owing to the coming elevation of Sir Charles Pearson to the Bench a vacancy will occur in the Parliamentary representation of the Universities of Edinburgh and St. Andrew's. The tongue of rumour has been busy with the name of Sir James Crichton Browne as a candidate for the seat, but we are able to state with certainty that he will not offer himself for election. Strong efforts will, we believe, be made to secure the seat for Mr. Dickson, who, it is probable, will be the next Solicitor-General for Scotland. The representation has been practically confined of late years to members of the legal profession; in fact, three gentlemen holding the office of Solicitor-General have in succession represented the Universities. In the case of the representation of a university in Parliament it is, we think, a thousand pities that mere politics or party considerations should prevail. A university consists of men of science and learning in various faculties, and it is only fair that no one faculty should monopolise the privilege of sending a representative of the whole university to Parliament. There can surely be little difficulty in finding

amongst the graduates of the distinguished Universities of Edinburgh and St. Andrew's a man of medicine or a man of science who would do honour to the representation of his Alma Mater. Among medical graduates mention has been made of Sir William Priestley, M.D., as a candidate, while as a man of science Mr. John Murray, LL.D., whose scientific investigations in connexion with the *Challenger* Expedition are known and appreciated all over the world, has been suggested. We echo what is we know the feeling of a large body of the graduates in expressing the hope that the link which has so long bound the representation of the Universities to a government office will on this occasion be broken; and we are in a position to state that Sir William Priestley is willing to accede to the request that he should allow himself to be nominated for the seat. His election would make no change in the balance of parties.

HEALTH IN THE POST OFFICE SERVICE.

UNDER this heading[1] we recently commented on the unsatisfactory nature of the statistical information supplied by the Post Office officials relative to mortality statistics in connexion with the Departmental Committee which has been inquiring into Post Office matters. We first called attention to the matter on Aug. 31st, 1895, and it is regrettable that nothing should have been since done to make the statistics more reliable. We sincerely trust, therefore, that a resolution which is to be proposed at the Annual Conference of the Postal Telegraph Clerks' Association at Exeter on May 29th next will be passed unanimously and that the authorities will lose no time in carrying out its recommendations. The resolution runs as follows:—

"This Conference expresses its regret that the immense and invaluable opportunities afforded for the collection of reliable statistical information relating to many important questions in economic science and public health which are afforded by the large bodies of men and women employed by the Post Office are not utilised, and urges upon the Postmaster-General the desirability of taking steps towards the collection and periodical publication of statistical information relating to postal employés, which shall be easily accessible and readily comparable with the statistical information now collected and tabulated by the Board of Trade, the Registrar-General's, and other public departments."

STREET NOISES.

AN American journal recently published a cartoon representing an Italian organ-grinder plying his itinerant vocation in Africa with King Menelek flying in the distance from the discordant strain of "Sweet Marie," and underneath the legend, "The Italians should have stuck to their regular weapons." This is, perhaps, too ridiculous, but it, at any rate, shows an intelligent appreciation of one class of hideous noise with which civilised nations are afflicted. The enormity of the evil has now become so great that hardly a day passes without some long-sufferer writing to the daily press to complain of his torture. A Bill, to which we have previously alluded, is now before Parliament, but a few such cases as that which was heard at the Thames Police Court on March 31st last will do much to stop the nuisance in the meantime. A restaurant keeper requested a man who was "playing" an organ a short distance from his restaurant to "go away," and on his refusing to do so gave the man into custody. Mr. Mead, before whom the man was brought, imposed a fine of 10*s.* or in the alternative committal for seven days with hard labour. In the course of his remarks Mr. Mead said he quite appreciated the justice of the compiaint and expressed his willingness to do all he could to help the prosecutor and others in the matter. The particular section which dealt with street music was not the only remedy for dealing with the nuisance, as persons could be prosecuted for creating an obstruction. If any one person was annoyed by an organ playing he had a right to interfere. The same remarks applied to the Salvation Army, who could be summoned if they refused to go away. The applicant thanked the magistrate for his advice, and remarked that he might have occasion to trouble Mr. Mead again. We hope he will should the nuisance be continued. Mr. Charles Fox of 104, Ritherdon-road, S.W., the honorary secretary of the Association for the Suppression of Street Noises, is collecting evidence as to the baneful effects of street noises on the patients of medical men, and we shall be glad to hear from any of our readers who can speak of the harmful effects of such noises on their patients.

[1] THE LANCET, Feb. 29th, 1896.

CONTAGION FROM KISSING.

IF there is one thing more than another calculated to rouse the funny man of the lay press it is the mere idea of the suppression or regulation of osculation from its undoubted capabilities as a medium for the spread of contagious disease. Dr. Coleman, reporting as to the health of Surbiton, states that he has not been able to find an atom of evidence of local defects of sanitation to account for certain cases of fever, and goes on to refer to the danger of "slight" cases of diphtheria, for, as he says, being so mild they are not always treated with the extreme care that experience warns us that such attacks when mild require. Many cases, he points out, are not recognised; no medical man is called in and the individual meanwhile by personal contact is capable of spreading the disease; and of all means the most personal and at the same time the most natural and probable is kissing. It should be a rule, he says, in all houses to never let a child or grown-up person with a sore throat, no matter what it may be called or be supposed to be, kiss or be kissed by another. He also suggests obvious precautions as regards spoons, cups, and such-like articles.

SHEFFIELD AND ITS HEALTH OFFICER.

WE recently commented[1] on the action of the city council of Sheffield in refusing to endorse the recommendation of its Health Committee to raise the salary of the medical officer of health, Dr. Harvey Littlejohn, from £500 to £750 by annual increments of £50. For so important a city as Sheffield this emolument of £500 a year is felt by all who appreciate the services which Dr. Littlejohn has rendered to the city to be totally inadequate. Whatever may be the feeling of the inhabitants in regard to the matter—and we do not think it is the feeling reflected in the action of the council—the medical profession in Sheffield is practically unanimous in the opinion that Dr. Littlejohn's salary should be increased. This has been shown in an effective manner by the presentation of a memorial signed by more than a hundred local practitioners, among them being Mr. Wm. F. Favell, J.P., consulting surgeon to the Sheffield General Infirmary and president of the Sheffield School of Medicine; Dr. William S. Porter, president of the Sheffield Medico-Chirurgical Society and honorary physician to the Sheffield General Infirmary; Mr. James H. Keeling, senior surgeon to the Jessop Hospital and consulting surgeon to the Sheffield Royal Hospital; Dr. Wm. Dyson, senior physician to the Sheffield General Infirmary and consulting physician to the Sheffield Royal Hospital; Mr. Simeon Snell, ophthalmic surgeon to the Sheffield General Infirmary; and Dr. W. T. Cocking, physician to the Sheffield General Infirmary. They also entertained Dr. Littlejohn at dinner at the Victoria Hotel. In a letter read from Mr. William F. Favell occurs the passage, "A first-rate medical officer of health is a great

[1] THE LANCET, Feb. 22nd, 1896, p. 502.

power for good in a community such as ours, and an incompetent one a great power for evil." It is needless to comment on this passage, and the memorial, excerpts from which we append, speaks for itself:—

"MEMORIAL.

"Sheffield, February, 1896.

"DEAR DR. LITTLEJOHN,—We, the undersigned members of your profession, resident in Sheffield and the vicinity, have observed with regret the refusal of the city council to grant an increase of your stipend. ..... If the services of a competent officer are to be retained it will, in our opinion, be necessary to raise the remuneration attached to the office of medical officer so as to bring it more in accord with that found in other important towns in the kingdom, and which shall bear a better relative proportion to the (by no means more important) positions held by other city officials. ..... The notification of diseases, which is so liable to occasion friction, has been carried out by you with such courtesy towards your professional brethren that not only has the city been a gainer, but your relations to your *confrères* have been most cordial and harmonious."

TETANY TREATED BY THYROID EXTRACT.

IN a recent number of the *Archives of Pediatrics* Dr. John Thomson of Edinburgh records a case of tetany in a rickety child fifteen months old who was treated unsuccessfully with thyroid. The condition of tetany had become established four days before the child was seen, and Dr. Thomson was induced to try the thyroid extract from remembering the frequency with which tetany has been said to occur in cases in which the thyroid gland has been excised. No change was made in the diet for some days and thyroid tabloids were given. The child, however, continued steadily to get worse, but rapid improvement took place when a suitable dietary was instituted. Dr. Thomson alludes to the remarkable results obtained by thyroid treatment by Dr. Bramwell and also by Dr. Gottstein, and he points out that there are probably very essential differences between the idiopathic tetany of adults and the commoner form in children so frequently, if not invariably, associated with rickets. Yet from the similarity of the symptoms it might be expected that what was beneficial in one would be beneficial in the other. Dr. Thomson's case, however, does not indicate this, although it must be confessed that the trial was not quite a conclusive one.

TAKING THE OATH.

AMONG the many reforms relating to the health of the public which THE LANCET has strenuously advocated the question of swearing with the uplifted hand has occupied a prominent place. It is a question of momentous importance to every person who has to enter the witness box, inasmuch as on it may depend the health not only of themselves but of everyone who is near and dear to them. To recapitulate the arguments which have been brought forward and the proofs which have been given to demonstrate the evils which may arise from the form in which the oath is generally administered in English courts is unnecessary, as we have done so repeatedly, but the following piece of testimony, which we extract from a paper on the Administration of Oaths in British Courts of Law and elsewhere in Great Britain, read before a recent General Chapter of the Guild of St. Luke by Mr. Frederick Lowndes, and printed in the Monthly Paper of the Guild for March, should be attentively perused by all whose duty involves the necessity of taking the oath. Says Mr. Lowndes:—

"Personally, nothing can be more distasteful to me than to appear singular or different from other witnesses, whether they be or not my professional brethren. Let me give briefly my reasons and my experiences. Nearly twelve years ago I gave evidence at the police-court before the grand jury and in the Crown Court, the case being one of rape. The first witness, a girl aged fourteen, was suffering from constitutional syphilis, and all the other witnesses, myself included, were sworn on the same Testament. Again, since that date I have had to appear as a witness very frequently—on one occasion five times in one day. For the reasons I have already given I must, on grounds other than those which may be called sanitary, prefer the Scotch oath."

Will not such testimony as this break down the bias of the judges and magistrates who stand in the way of a necessary reform? We have raised our voice again and again against the practice of kissing the book, and there must be but few of the general public who do not know that they need not kiss the book when taking the oath. At the end of January last it gave us pleasure to refer to the praiseworthy example of his Honour Judge Emden, who had notices posted up in his county court calling attention to the fact that the book need not be kissed when taking an oath. The officers of the court were also instructed to tell witnesses when being sworn that they need not kiss the book unless they liked. Who among our officers of the law will follow his example

THE CHALYBEATE WATER OF HAARLEM.

HAARLEM, the Dutch city famous among many other things for the great organ in the cathedral and known everywhere for the cultivation and exportation of tulips and other flowering bulbs, possesses a chalybeate spring which promises to give that part of Holland a reputation as a health resort. It is stated that iron is present in the water in a large, though not excessive, amount, each litre containing 11 centigrammes of oxide (= about 7 grains per gallon) as well as 3·24 grammes of sodium chloride and a small proportion of manganese. The temperature of the spring is 11° C. (= 51·8° F.). It has been named the Wilhelmina Bron, no doubt after the youthful Queen of Holland. A handsome pump-room has been erected, and there is a bathing establishment in which chalybeate baths at any temperature, with or without the addition of carbonic acid, may be had. There are also rooms for sulphur baths, salt baths, mud baths, douche baths in all possible forms, vapour baths, and a gymnastic department with appliances for every kind of exercise. A description of these necessary adjuncts has been written in English by Dr. C. E. Daniels of Amsterdam, who adds numerous medical testimonials as to the utility of the water and its non-liability to produce constipation. Haarlem is a city of about 59,000 inhabitants, and it is, of course, very easy of access.

OUR ROADS.

SOME eighteen hundred years have passed since our forefathers were taught the art of road-making by the armies of Cæsar, and it might have been thought that this period was sufficiently long for evolution to have produced the most perfect type of *via*. Unfortunately this is not so, as all who travel much on our great highways (and notably medical practitioners) must know, and we agree with the author of a pamphlet issued by the Roads Improvement Association when he says "we as a nation have failed to keep abreast of the times, while our neighbours across the Channel ..... give us a long start." No doubt the advent of railroads has much to answer for as regards our apathy in this respect, but good roads are a fundamental necessity for a country like England, which owes not a little of its greatness to the arteries of commerce commenced by the Romans and recorded in the "Itinerary of Antoninus." With the advent of the horseless carriage the roads of England are likely to prove of even greater importance in the future than they have done in the past, and the work of the Roads Improvement Association,

whose address is 57, Basinghall-street, deserves encouragement. The Association is doing good work by directing the attention of the various surveyors and other highway officials throughout England and Wales to the system of road-making and repairing advocated by the Association, which appears to be much appreciated not only by the public in general and by cyclists in particular, but by the various authorities who have charge of our highways and who in many instances have adopted its principles and circulated its instructions amongst their men. Although the services of the committee of the Association and those of its secretary are given voluntarily the expenses attaching to the distribution of a large quantity of literature are necessarily great, and the support of the public is needed.

THE SMALL-POX OBJECT LESSON AT GLOUCESTER.

APPEALING for donations in aid of the small-pox stricken community at Gloucester the Very Reverend H. D. Spence, the Dean of that city, in a letter to the *Times*, concludes with the following remarks: "If the serious object-lesson which Gloucester now presents be laid to heart by those cities of England who are content to rest upon the dilatory proceedings of the Commission on Vaccination appointed some seven years ago, and in consequence are neglecting the one precaution, vaccination, which it has been proved by overwhelming evidence can alone save our people from the horrors of this fatal malady, the sufferers for whom we plead so earnestly will not have suffered in vain." These are words of wisdom, and we hope that the cities referred to will no longer delay the enforcement of the one prophylactic which can prevent epidemics of the deadly scourge.

A CENSUS FOR EGYPT.

ALTHOUGH it is quite true that the reform record in Egypt is, as Lord Cromer puts it, one of "steady and unostentatious progress," there are, nevertheless, some matters to which we venture to think a sufficiency of attention has not as yet been directed. In the first place it is absolutely necessary that an accurate census of the people should forthwith be established. This very elementary step towards civilisation should have been taken long since; but, on the principle of better late than never, we trust that no more time will now be lost. The sanitary department makes laudable efforts to furnish vital statistics, but for lack of a reliable basis to work on the results are shorn of half their value. There is not a civilised State in the world in which the rulers do not regard a correct census as a matter of the utmost importance, and it little becomes Englishmen to allow the country they are reforming to be behindhand in this respect. In Egypt the cost of a census would not be great, for a good deal of the machinery is already in existence, and the Sheikhs and Omdehs are said to be thoroughly alive to the beneficent intentions towards them of their English controllers. Now that the finances of Egypt are so marvellously prosperous it is surely not unreasonable to ask, in the interests of hygiene and demography, that steps should be immediately taken to establish a trustworthy census throughout the country.

VAGRANTS.

THE part played in the dissemination of infectious disease by persons of the vagrant class and particularly just now the interest centred in the West of England and South Wales by reason of an extending small-pox outburst render the issue of the latest Parliamentary return of the numbers of vagrants relieved in England and Wales more than usually important. As compared with the first day of 1891 the vagrants relieved in the several unions on Jan. 1st, 1895, showed an increase of from 4960 to 8810. These numbers were made up of 4204 adult males, 553 adult females, and 164 children under sixteen years of age in 1891; and of 7631, 879, and 297 respectively in 1895. Speaking of proportions, the adult females have not largely increased their numbers, but the disparity between them and the males in actual amount remains enormous and has continued to be increasingly great. In London the aggregate of 754 vagrants relieved in 1891 has grown to 1211, and in the groups of counties comprised in the South Midland, West Midland, North Midland, and Welsh divisions the totals have more than doubled themselves in the four years. Taking as an example the county of Gloucester, where small-pox now rages, we find that on the first day of each successive half-year since January, 1893, the vagrants relieved have been 69, 134, 134, 56, and on Jan. 1st, 1895, as many as 146. This increase, however, has no relation to the vagrants treated in the city workhouse, which on the latter date were only 3 in number. Increases in Yorkshire and the counties still further north have been relatively small.

INTERESTING GIFT TO THE BRITISH MUSEUM.

MR. E. WHEELER, a druggist of Clifton, has recently presented to the British Museum an accurate and scientific register of the actual form and colouring of 2500 of the 3000 specimens of fungi which occur in the British Isles. The work is the labour of many years and consists of twelve volumes of water colour drawings. In acknowledging this handsome gift Professor Flower says: "The trustees desire me to assure you of their high appreciation of the extreme accuracy and beauty with which you have delineated the character of the originals, and to return you their cordial thanks for so munificent a donation to the national collection of natural history."

THE RECENT OUTBREAK OF ILLNESS AT TWYFORD SCHOOL.

DR. FREDERICK W. ANDREWES, in his report on the recent epidemic of sore-throat at Twyford School, gives it as his opinion that the outbreak depended solely on the introduction of diphtheritic poison from outside the school, and that its spread was not affected in any way by lack of proper sanitation. His investigations show that the ventilation, water-supply, and milk-supply were and are most satisfactory. The drainage in a few minor instances might be improved.

THE next annual meeting of the Medico-Psychological Association of Great Britain and Ireland will be held in London, at the rooms of the association, 11, Chandos-street, Cavendish-square, W., in the latter part of July. Notice of the dates and other particulars will be issued in due course, and the council confidently hope that a large gathering of members will be present to show their interest in the work of the association, to read papers, and to take part in the discussions.

THE Huxley Memorial Committee will strike a medal, among other purposes, for award by the Royal College of Science, London. The committee desire designs for this, and particulars will be furnished by the honorary secretary of the Huxley Memorial Committee, Professor G. B. Howes, Royal College of Science, South Kensington, S.W.

THE next meeting of the Odontological Society of Great Britain will be held on Monday evening next, at eight o'clock, when papers will be read by Mr. A. Marmaduke Sheild, Mr. Storer Bennett, and Mr. Charles Tomes, F.R.S.

MR. CHAPLIN, President of the Local Government Board,

will receive a deputation from the Workhouse Infirmary Nursing Association on Wednesday next, April 15th, at 2.30 P.M., at the House of Commons.

THE Prince of Wales has fixed Wednesday, June 10th, for the festival dinner at which he will preside at the Imperial Institute in aid of the re-endowment of Guy's Hospital.

ON THE ORIGIN AND HISTORY OF SOME DISEASE-NAMES.

BY WILLIAM SYKES, M.D. DUNELM., F.S.A.,
A CORRESPONDENT OF THE NEW ENGLISH DICTIONARY.

WHILE the New English Dictionary is working out in an exhaustive manner, and on historical lines, the origin, development, and use of every word in the English language, it will not be amiss for members of the medical profession to review their own terminology, both as a small contribution to this monumental work and as an independent attempt to discover the principles on which certain medical terms have come into existence originally. This, again, may not be without use in settling the lines on which they may be most usefully formed and developed in the future. Our vocabulary must, in the first instance, be sought out in the medical literature of all ages: not in the systems of nosology which have been so abundantly produced from the time of Cullen to the present day. The language of a profession is formed from the words actually spoken, written, and read by its members, just as the language of a country consists of the words used and understood by the people, not of the inventions, suggestions, emendations, and alterations of a few scholars in their studies. The subject, indeed, under consideration is the vocabulary of the science of medicine as employed by English writers in English medical works. One cannot help noticing in the first place that, however much Latinised or Grecised the names of diseases may have been in the past, medicine has really collected her vocabulary out of every language under heaven and from every age. Folk-speech dealing with rough objective symptoms has given us no mean proportion of our disease names, folk-adaptation from neighbouring peoples many more, folk-degradation of the language of the learned a few, while the deliberate coinage of writers has of course added largely to the list. In many instances we are able to trace the history of a medical word from its first inception and to decide at once to which of the above classes it belongs; in others we can even name the original birthplace of a word, say from what language it has been adopted, and give almost the exact date of its actual employment in our literature, yet at the same time be unable to perceive the reason of its adoption. The word "scarlatina" is an example of this difficulty. We believe the term to have been first used in English medical literature by the great Sydenham in his "Observationes Medicarum," published in 1676.[1] We also know that the word is of Italian origin, having been actually employed by an Italian writer in 1527,[2] and that it is derived from the Italian "*scarlatto*" (scarlet) in allusion to the colour of the patient's skin; but why Sydenham, who, with the doubtful exception of a period of study at Montpellier, had never been abroad, should have inserted an Italian name amidst a Latin list of maladies is difficult to explain; indeed, we have little to offer beyond conjecture. Could Sydenham's friend, John Locke the philosopher, having seen a case of the disease in his company, have suggested to him the name bestowed upon such abroad? We know that Locke was at Montpellier about the time of the publication of this very work, and we also learn from one of Sydenham's letters[3] that Locke "had troubled himself in visiting with Sydenham very many of his variolous patients especially." May it have been in some communication from him at Montpellier, or elsewhere abroad, that Sydenham received an account of the malady with its name? We know, however, from that quaint but most excellent writer, James Cooke of Warwick, that the English term "scarlet fever" as applied to this very disease was in provincial use in Sydenham's own time. The first edition of Cooke's "Mellificium Chirurgiæ, or Marrow of Surgery," preceded that of Sydenham's "Observationes Medicarum" by a year, while its fourth edition, from which I quote, appeared only nine years later. In what edition the passage I extract was first inserted I cannot, in the absence of the earlier editions, at present ascertain. In his fourth edition, however, Cooke describes a disease he calls "rosalia,"[4] as showing "red, fiery spots which break out at the beginning of the disease all over the body, as if it were a small *erysipelas*, though the tumour is hardly discernible." "They sometimes," he continues, "break not forth till the fourth or fifth day; in the progress of the disease they sometimes possess the whole body, so that it looks as though it were all on a red fire, which colour is again changed into spots as at the beginning, which vanish upon the seventh or eighth day, the cuticle falling off in Scales or great Fleaks. The first and last of these [i.e., small-pox and rosalia] were at Warwick," he says, "at the writing hereof, the last going under the name of scarlet fever." It is possible, if Sydenham originally wrote his works in English, as has been stated, and was indebted to Dr. Mapletoft or another hand for his Latin translation, that he used the English term "scarlet fever" and owed the Italian "scarlatina" to his translator. It is at any rate a curious fact, as Dr. Mason Good notices on Dr. Willan's authority,[5] that "scarlatina" was first used by British writers—as indeed has continued to be the case ever since—although Dr. Good remarks[6] that "in saying that the denomination scarlatina was first applied to the disease by British writers Dr. Willan can only mean that it was by British writers first applied *technically* and introduced as a professional term into the medical vocabulary; for the term itself is Italian and was long a vernacular name in use on the shores of the Levant before it was imported into our own country." Be the reason of its adoption what it may, "scarlatina" affords an excellent instance of the uselessness of attempting to supplant a widely-accepted disease-name by some more elegant or scholarly synonym. Dr. Mason Good, in his day a great nosologist and classifier of disease, made a deliberate attempt during the early third of the present century, when his works were in vogue, to replace "scarlatina" by the old term "rosalia." He wrote[7] that "scarlatina is a barbarous and unclassical term, which has unaccountably crept into the nomenclature of medicine upon the proscription of the original and more classical name rosalia," which he states it to be his intention to restore. "It will not," he says, "be the fault of the present author if the correction so universally called for in the case before us should be postponed to another age, or the error complained of be charged upon future nosologists." He goes on to mention De Haen, Morton, Huxham, Heberden, and others as objecting to the use of the term "scarlatina," and, although he mentions Dr. Willan as employing it, he declares that even he considered it necessary to apologise for its continuance on the ground "that, however offensive the term might be to a classical ear, having been first employed by British authors, it could not well be displaced, having obtained admission into all the systems of nosology." Yet, in spite of this consensus of the opinions of great men, we find the word "scarlatina" as commonly used to-day as when Dr. Mason Good wrote, while the suggested amendments of himself and his authors are entirely forgotten in favour of the popular term, which has become so naturalised in our language that its employment is quite as usual as its English equivalent "scarlet fever," which is looked on by the poor as the name of a severer malady, the question being frequently asked whether a patient be suffering from "scarlet fever" or only scarlatina.

Another disease-name of Italian origin is influenza, the exact date of whose introduction into British medical literature is a little uncertain. It was established in both popular and medical use during the epidemic of 1782.[8] Mr. Huxham, who wrote in 1758 an account of the previous epidemic of 1743, says: "This fever seems to have been exactly the same disease as that which in the spring was rife all over Europe,

[1] Sydenham: Opera Omnia, Greenhill's edition, lib. vi., cap. ii., p. 243. Published for the Sydenham Society in 1844.
[2] Hirsch's Handbook of Geographical and Historical Pathology: New Sydenham Society's Translations, vol. i., p. 172 (note 10).
[3] Latham's Translation of Sydenham's Works (Sydenham Society's edition), vol. i., Life, p. 72.
[4] Mellificium Chirurgiæ, or Marrow of Surgery, fourth edition (1685), part vi., section ii., p. 214.
[5] Dr. J. Mason Good: "Study of Medicine," fourth edition, 1834, vol. ii., p. 318.
[6] Loc. cit., p. 318.
[7] Ibid., p. 317.
[8] Thompson's Annals of Influenza, Sydenham Society's edition, p. 113 et seq.

termed the influenza"; while Dr. George Baker, in describing the immediately preceding epidemic of 1762, writes: "At Norwich ..... according to the testimony of the distinguished physician William Offley ..... a much greater number fell victims than were destroyed by a similar pestilence in 1733 or by the more severe visitation, called influenza, in 1743." Dr. Watson, in a letter to Dr. Huxham dated Dec. 9th, 1762, states that "it is nearly the same disease which was at London in April and May, 1743, and *then called influenza*, the name applied to it in Italy." We may from this evidence assume that the term was first introduced into England during the epidemic of 1743, unless, indeed, Häser's statement, quoted by Dr. Creighton,[9] that the word was used in the title of an Edinburgh graduation thesis in Latin as early as 1703, be more than a clerical error. "Influenza," then, is a term directly imported into England from Italy and imposed on our medical terminology by popular approval. It is not quite plain, however, what the original Italian word indicated in reference to the disease. Zuelzer[10] says that it refers to the assumed influence of the atmosphere or climate, or—from the further signification of the word as something fluid, transient, or fashionable—to a name commonly used in the epidemic of 1709—viz., "die Galantrie-Krankheit" or "das Modefieber."[11] Dr. Creighton, however, remarks[12] that, while the word is usually taken to mean the influence of the stars, and may even have got that sense by popular usage, the original etymology was probably different. He points out that as early as 1554 the Venetian Ambassador in London called the sweating sickness of 1551 an *influsso*, which is the Italian form of *influxio*. The latter is the correct classical term for a humour, catarrh, or defluxion, the Latin *defluxio* itself having now a special limited meaning. It was therefore not astrology, but humoral pathology, that brought in the word *influsso* and *influxio*, out of the former of which word Dr. Creighton suspects that "influenza" grew, rather than out of any notion of influence rained down from the heavenly bodies. All this is, however, little more than conjecture, and can only be set at rest by a resort to Italian literature of the seventeenth and eighteenth centuries, an inquiry conducted on those historical lines which the "New English Dictionary" so well advocates and exemplifies. Curiously enough, the same popular caprice which placed the name "influenza" in the list of specific diseases almost succeeded in finally degrading it into a synonym of a common cold. The great epidemics of the disease in 1833 and 1847 fixed the association of the word so closely in connexion with a catarrhal condition that an influenza cold became an admitted term for an ordinary cold or coryza, especially if attended with sharp fever.[13] It was only the present cycle of outbreak, commencing in 1889, which disassociated the name with any form of catarrh.

In or before 1782 popular favour established the name "la grippe" in as firm a condition of acceptance in France as its rival, "influenza," in England. In this, folk etymology probably assisted. "La grippe" is, according to Joseph Frank,[14] derived from the Polish word *chrypka* (raucedo), but was at once in France referred for its etymology to the French verb *agripper* (to seize), the sudden onset of the attack in those afflicted apparently rendering this derivation a very likely and apt one. A similar instance of transferred derivation took place in the word "dengue," as will be noted directly. Attempts have been made, entirely unsuccessfully, however, to popularise the French *grippe* in England in place of the Italian *influenza*.

With regard to the derivation of the word "dengue," it appears that the term in Spanish means fastidiousness or prudery, also a female dandy; and, as the disease dengue is, on account of neuritic or muscular pain, accompanied by a stiff, ungainly gait and awkward bearing, when it first broke out in Cuba in 1827 no doubt was entertained that its title referred to this peculiarity, as was shown by its immediate translation in the English West Indian possessions into "dandy fever," a name it yet bears. Another popular synonym, "the giraffe," is no doubt referable to the same fact and derivation. Dr. Christie has, however, shown[15] that dengue is really a Swahili word, the full name of the disease in Zanzibar being *ka dinga pepo*, which may be thus construed: *Ka* is a partitive article meaning "a" or "a kind of"; *dinga*, *dyenga*, or *denga* means "a sudden cramp-like seizure"; while *pepo* signifies "an evil spirit or plague." And it was the Swahili *dinga* or *denga* which was confused with the Spanish word *dengue* on the appearance of the disease in the Spanish possessions in 1827. A still more absurd explanation of the meaning of dengue, than the Spanish one in question, has been attempted by some of our own writers. They explain it, by an ingenious method of double beheading, to be nothing more than (A)den (A)gue.

Although the history of the adoption of the French word "diphtheria" in English medical literature, as well as its origin and final alteration, are much better known than that of some of the above terms, yet on account of certain verbal peculiarities which mark its adaptation into English form it is worth recapitulating. In 1821 Brettoneau of Tours read a communication before the then Académie Royale de Médecine on Croup and Malignant Angina, in which the following paragraph occurs[16]: "Let it be permitted me to designate this phlegmasia by the name of *diphthérite*, derived from *διφθέρα, pellis; exuvium, vestis coriacea*." In the same paper the adjective *diphthéritique* also occurs frequently. This new designation for a certain form of croupous inflammation was imported into English medical literature to a somewhat limited extent and in the modified form "diphtheritis." It did not, however, become a part of our terminology and was nearly invariably followed by reference to its French introducers and to French observations. It was accompanied in these instances by its adjective, Englished into "diphtheritic." In 1855 Brettoneau, in a fifth memoir,[17] altered his term *diphthérite* into *diphthérie*. Sir J. R. Cormack[18] asserts that he did this because he had discovered that the disease was not of an inflammatory character. Is it not equally probable that someone had drawn his attention to the fact that his original coinage was made on a mistaken model? It was framed after the example of such words as "iritis," "bronchitis," "laryngitis," &c., where, however, the completed word is composed of two elements, one indicating the region or part affected—e.g., "ir" from "iris" in "iritis"—the other the mark of inflammation, "itis." In Brettoneau's term, however, the primary element of the word dealt with the pellicular result of the inflammation, not at all with the part inflamed. Analysed on the model of the other words ending in *itis*, Brettoneau's coinage resolved itself simply into "the inflammation of a skin or pellicle" instead of into that which he desired to imply—viz., inflammation characterised by the production of a skin or pellicle.

At the same time that Brettoneau, from whatever motive, altered his new substantive from *diphthérite* into *diphthérie* he also amended the adjective *diphthéritique* into the form *diphthérique*. In 1857 a historical epidemic of the disease crossed the Channel from France to England, bringing with it its eagerly adopted French title *diphthérie* in the slightly altered form "diphtheria." Sir J. R. Cormack[19] states "that diphtheria was a word almost unknown in English medical literature till 1859, when the Sydenham Society published a volume of memoirs on the disease," but in this he is quite mistaken; the word made its appearance in the English medical journals as early as 1857, while those of 1858 actually abounded with it, as did the American professional papers for the same year. Its acceptance was widespread and immediate, and it at once became an established member of our language. Not so with the amended form of its adjective *diphthérique*, which a few purists vainly endeavoured to naturalise as "diphtheric." But, with the capriciousness which characterises popular word-adoption, "diphtheric" never became general, and, while Brettoneau's original substantive "diphtheritis" was relegated to the limbo of disused words, its derived adjective, "diphtheritic," was universally adopted in this country, and we have the curious spectacle of a substantive "diphtheria" and a resulting adjective "diphtheritic" which could by no correct method of derivation have been formed from it in a legitimate manner. During the last few months I have noted with some pleasure that a more correctly formed derivative adjective, "diphtherial," has come into vogue, which may, perhaps, in course of time perform that which the equally

[9] History of Epidemics in Britain, 1894, vol. ii., p. 304.
[10] Ziemssen's Cyclopædia of Medicine, English translation, vol. ii., p. 517.
[11] I.e., "Gallantry disease or fashionable fever."
[12] Loc. cit., vol. ii., p. 304.
[13] Creighton: Op. cit., vol. ii., p. 304.
[14] Quoted in Ziemssen's Cyclopædia of Medicine, English translation, vol. ii., p. 517.
[15] Glasgow Medical Journal, September, 1831. See also New English Dictionary, under Dengue.
[16] New Sydenham Society's Memoirs on Diphtheria, 1859, p. 20.
[17] Op. cit., p. 173.
[18] Quain's Dictionary of Medicine, 1885, p. 374, under Diphtheria.
[19] Loc. cit.

correct "diphtheric" could not do—viz., entirely displace the older and incorrect "diphtheritic."

Croup, the name of a disease which is by some thought to be really diphtheria, was transferred during the last century from the Lowland Scottish dialect into a permanent position in our medical nomenclature. In parts of Scotland "to croup" is a verb meaning to cry hoarsely, to croak as a raven, to make a hoarse crowing sound. It appears to be allied in derivation to the English provincial word "roup," applied to a disease of fowls. The verb was also applied to the sound caused in the disease, a use not yet quite obsolete; in some medical works and in many nurseries a child is still said "to croup" when emitting the brassy, harsh cough symptomatic of the complaint. Afterwards, by extension, the term "croup" was doubtless transferred to the disease itself. It was first used in medical literature by Dr. P. Blair,[20] of Cupar, Angus, in 1718, who in describing a hitherto unnoticed malady gave it its local designation. It was not, however, until 1765, when Dr. F. T. Home,[21] another Scotchman, published his treatise on the malady, that it obtained a permanent place in our nosology as a specific disease under its provincial name.

Measles is an old English disease-name which so-called classical nosologists have vainly attempted to replace by such synonyms as "morbilli" and "rubeola." Dr. Creighton[22] says that originally the term "measles" meant the leprous—first in the Latin form *miselli* and *misellæ* (diminutive of *miser*), and that John of Gaddesden, by haphazard bracketing of the disease of measles and the tubercular nodules of leprosy under the common name of "messles," caused the word to be divorced from its original connexion with leprosy and restricted to its common use. "It can," he concludes dogmatically, "hardly be doubted that we owe the English name 'measles' as the equivalent of morbilli to John of Gaddesden." In this, perhaps from taking too exclusively English a standpoint in his examination of the literature of the subject, Dr. Creighton is probably in error. Dr. Skeat,[23] a remarkably accurate writer, declares, on the contrary, that the word "measles" is wholly unconnected with the Middle English *mesel*, a leper, which merely meant originally "a wretch," from the old French *mesel*, Latin *misellus*, the diminutive of *miser*, wretched. Measles is, he says, derived from the Dutch *maseln* (measles); the disease is also called in Holland *masel-sucht*, the measle-sickness, so translated by an old English writer. The literal sense is "small spots." The original word occurs in the Middle High German *mase*, Old High German *masa*, a spot. Hirsch[24] also states that the English word "measles" corresponds to the German *Maal* and *Masern*, and the Sanscrit *masura*, spots. Doubtless it is to this meaning of spots, hence spotty, that we owe the term "measly pork," as applied to the meat of the pig when infested with scolices of tænia.

Of names deliberately invented by medical scholars of set purpose for the designation of diseases or their symptoms some have taken a permanent place in our language and literature, while many more have sunk back into a merited oblivion. Of the former class many were coined to describe diseases or conditions previously unknown, and passed into common acceptation with the recognition of the existence of the maladies they described. Probably "bronchitis" may be taken as an apt illustration of this class. The word was introduced into use by the English Dr. Badham in 1810,[25] and afterwards by the German J. P. Frank in 1812.[26] The disease itself had been hitherto little recognised or investigated under its old name of "peripneumonia notha," so that the alteration in name not only signalised an improvement in both pathology and treatment, but also accompanied a description of disease which familiarised both practitioners and the people with an easily recognisable and striking affection, very common among the poor, and was thus adopted, once and for ever, in the folk-speech of the country.

Other words of this successful class of deliberate scientific coinage have held their ground simply because they were invented to meet the requirements of the learned in regions which, lying beyond the ken or need of the vulgar, were the sole possession of science. The word "aphasia" is an example of this series, the pathological condition it represents being wholly, and the clinical condition nearly, outside the observation and analysis of laymen. Therefore the word was forged by scholars for scholars, after due discussion and alterations, which would have been impossible in the case of a word which was amenable to the disturbing process of public approbation or disapproval.

Trousseau[27] tells us that "the affection now called 'aphasia' was in 1841 termed 'alalia' by Professor Lordat, and that in 1861 M. Broca changed this name for that of 'aphemia.' But M. Chrysaphis, a very distinguished Greek scholar, and himself a Greek, although accepting the term 'alalia,' proposed as a better one that of 'aphasia,' derived from α, privative, and φάσις, speech. M. Littre, whose authority is so great, and M. Briau likewise preferred the word 'aphasia,' and all three concur in rejecting 'aphemia.'" Trousseau himself had at first adopted the name of "aphemia" after M. Broca, but afterwards, on the authority of the scholars named above, substituted for it that of "aphasia." To complete the transaction the German, Küssmaul, has more lately annexed Professor Lordat's discarded word "alalia," and applied it to stammering, an entirely different disease.[28]

One of the most successful and extensive artificial systems of nomenclature in a kindred branch of science was that of Dr. Barclay. In 1803, being then a teacher of anatomy in Edinburgh, he published a new system of anatomical nomenclature, which was so successful that a number of his suggested terms were at once adopted by anatomists and incorporated in their works. Many of them remain in daily use even now. He recommended about twenty-five new adjectives, or adjectives with new meanings, to denote the various aspects and situations of the organs and limbs, &c. His list includes such useful and common words as mesial, lateral, dextral, sinistral, peripheral, central, proximal, and distal.

Thus we see physicians and scholars forging new names as blacksmiths forge horseshoes, but it is, as noted above, only while these new creations are retained in the calmer atmosphere of science that they maintain their vitality. Once let these word-smiths begin making new names for folk maladies, and their artificial creations immediately crumble to pieces before the more robust denizens of the land. It is doubtful, for instance, if Barclay's system of anatomical nomenclature would have so rapidly commended itself if applied to some more popular science. As it was, the moment Barclay transgressed the genius of our language his proposed alterations were ignored and are now forgotten. This was so in the case of his new system of adverbs, of which he suggested a like number with his adjectives. While the latter ended in "al," the former concluded with "ad," and we had "laterad," "dextrad," "sinistrad," and a score or so more of like monstrosities, a very few of which struggled on in very occasional use for about forty years,[29] and are now quite obsolete. Even when scientific coinages have been adopted into the language of the people it is not always certain that men of fair culture correctly analyse them into their original constituents and real signification. In a recent novel of an American author, Frank Stockton,[30] the following sentence occurs: "She was, in a certain sense, a floraphobist, and took an especial delight in finding in foreign countries blossoms which were the same or similar to the flowers she was familiar with in New England." Here the author has evidently formed his word "floraphobist" on some such imaginary model as hydrophobist, derived from hydrophobia, a well-known disease-name handed down to us from Celsus. But unfortunately the result arrived at is entirely opposite in meaning to what the writer intended. "Floraphilist" was the thing

[20] Miscellaneous Observations in the Practice of Physic, &c. London, 1718.

[21] Inquiry into the Nature, Cause, and Cure in Croup. Edinburgh, 1765.

[22] Op. cit., vol. v., p. 632.

[23] Concise Etymological Dictionary, fourth edition, 1894, p. 276, under Measles.

[24] Handbook of Geographical and Historical Pathology: New Sydenham Society's edition, vol. i., p. 154.

[25] On the Inflammatory Affections of the Mucous Membrane of the Bronchiæ. London, 1810.

[26] Interpretationes Clinicæ, i., 110.

[27] Lectures on Clinical Medicine: New Sydenham Society's Translations, vol. i., lecture vii., p. 218, note.

[28] Ziemssen's Cyclopædia of Medicine, English translation, vol. xiv., p. 633.

[29] A good résumé of Barclay's nomenclature will be found in Wishart's translation of Scarpa's Treatise on Hernia. Edinburgh, 1814, p. xiii. et seq. The latest anatomical work in which I have noted any instances of Barclay's adverbs is Todd's Cyclopædia of Anatomy and Physiology, 1849, &c. The question has been raised whence was the form ending in "ad" derived—in "centrad," for example. The New English Dictionary suggests it as derived from the Greek κεντρᾶδε, but the words are entirely Latin in construction, and were, I doubt not, formed by the displacement of the Latin participle "ad" (to or towards) to the end of the new coined name.

[30] A Borrowed Mouth, and other Stories, 1887: Our Story, p. 271.

the author desired to indicate, but, evidently confusing in his mind the madness of rabies with the last section of the word "hydrophobia," he took it as tantamount to "mania," and deemed that a "floraphobist" was the same as a "floramaniac"—a somewhat unfortunate blunder, well illustrating the contention that mere scientific coinages, however ancient, hardly ever sink into the understandings of the people so completely as native terms do.

When, however, a disease-name of scientific invention has once become welded into the language of the nation it almost invariably holds its own against subsequent attempts of scientists at emendation, just as a folk-name does. Take typhoid fever, for instance. Originally introduced by Louis in 1829 in his classical memoir on the subject,[31] *fièvre typhoïde* has been in general French use ever since, and was widely adopted in England about 1851. From an imaginary possible confusion between the adjective "typhoid," as applied to certain conditions of an asthenic, non-specific nature, and the specific fever itself, Dr. Murchison was led to invent an improved name, "pythogenic"—that is, filth—fever. This was, on the obvious ground of incorrect suggestion, at once objected to, was never very widely accepted, and is now quite obsolete. Dr. Wilks of Guy's Hospital, for the same theoretical reason, proposed "enterica" or "enteric fever" as a preferable term. This has had a more general acceptance unfortunately, especially among medical writers connected with Guy's Hospital, and is frequently to be found in medical reports and works. It has, however, never gained a footing in the literature or language of the people, and will, therefore, when it has produced its only effect, that of confusing the lay mind, finally die a natural death. Meanwhile, even those very purists who object to the term "typhoid" as likely to confuse, agree that "enteric fever" is probably caused by the bacillus typhosus of Eberth. The German "typhus" in connexion with this disease is, in fact, to be retained, while the French "typhoid" is to be sternly rejected.

Beyond such historical interest as this paper may arouse, its aim is to draw attention to the principles on which disease-names have been successfully formed in the past and to offer a few suggestions for their formation in the future:—1. Since medical literature in this country has become essentially English, disease-names which are most in sympathy with the genius and structure of our language or are actually drawn from our speech are most suitable for adoption by us. Since the writing of our literature in Latin has for ever ceased, the attempted classicising of names introduced from other sources ought to be abandoned. It has, for instance, been attempted to Latinise "dengue" into "denguis," an absurd endeavour. 2. A disease-name once generally adopted should never on any pretence be changed. Such alteration only confuses the records of historical medicine. In many of the diseases described by older authors we vainly seek for their real nature under an unfamiliar nomenclature. On the other hand, imaginary disease-names invented in modern days for historical epidemics are equally misleading. The "black death" which ravaged Europe during the years 1348–50 with such terrible results is not to be found in any contemporary literature under that name, which has been shown by Dr. Murray in the New English Dictionary to have had no more recondite a source than Mrs. Markham's "History of England," published no earlier than the beginning of the present century for the instruction of children. 3. It is vain to attempt to replace a folk name or one widely adopted by the people by a new one deliberately coined by scholars, and this for the following reasons: first, whatever names may be accepted by medical men must be translated by them into the vernacular of their patients, and by a resulting reaction the vernacular name comes to be the commoner one with themselves; and, secondly, there is no continuity or unchangeableness in the terms invented by *savants*, which are amended, improved upon, and displaced by the next writer on the subject, or, even more absurdly still, by the very inventors themselves in a subsequent publication. A striking instance of this occurs in that excellent work, "Fagge's Principles and Practice of Medicine." In the first edition, published in 1886, German measles is termed "rötheln," but in the second edition, issued only two years later, it is promoted to the dignity of "rubeola." Meanwhile, some writers call measles themselves "rubeola" and others "morbilli"—a pretty confusion, indeed, for the subsequent historian to unravel. These nosologists are, indeed, like one of Thackeray's characters, Lady Southdown, who having forced her followers to accept Podger's pills and Jowler's religion, had by the time their adherence was secured become herself a doubter and expected them instantly to abjure those heresies, medical and theological, and to accept other prophets equally extreme. 4. All language is the result of natural growth and cannot be artificially created. It is, therefore, more scientific to accept the products of natural development than to indulge in an artificial and therefore ephemeral system of cultivation. 5. All disease-names are only labels by means of which the maladies themselves can be identified, discriminated, and classified, and those names are the best which are simple, distinctive, and express no theories of causation. It is the folk names which most often meet these requirements, and therefore deserve the widest adoption by us in the future.

Gosport, Hants.

[31] Recherches Anatomiques, Pathologiques, et Thérapeutiques sur la Maladie, &c., Paris, 1829.

THE LOCAL GOVERNMENT BOARD TWENTY-FOURTH ANNUAL REPORT (1894-95).

FOOD.

THERE was an increase in the number of the analyses made under the Food and Drugs Act during the last official year amounting to nearly 2300 samples over the number made in the previous period, despite which the returns show that the proportion of adulterated samples was considerably below the average of the past three years—viz., 10·3 per cent., which *is the lowest percentage of adulteration since the passing of the Sale of Food and Drugs Act in 1875*. We take this as a positive proof that with the increase of vigilance on the part of the authorities to exercise their powers there has resulted a distinct decline in fraudulent practices which, during the operation of the Act, is without parallel. We have again and again insisted that a greater number of samples per head of population should be taken, and that in those districts where the Act was inoperative through the inaction of the authorities the Local Government should stir them up to their sense of duty in this matter. And the result has been satisfactory. There is still room, however, for improvement, since the present report shows that in all there were thirty-seven districts with an aggregate population of nearly two millions in which the Acts were entirely or almost entirely ignored. What is it that prevents no less than eleven county councils and the town councils of thirteen boroughs (including Great Yarmouth with a population of 49,334) and the thirteen boroughs including important places like Norwich, Stockport, Northampton, Ipswich, Warrington, and Tynemouth from making the slightest attempt to carry out the Acts which aim at providing a pure food supply for the people? We cannot believe that the food supply of these districts is so free from reproach that the application of the Act would be superfluous. We rather think that it is indifference on the part of the authorities, and steps should be taken to represent to these authorities the important gap they leave unstopped in carrying out their administrative duties. Looking down the list of the various articles of food that were collected for analysis we find that milk as in previous years was the chief subject of adulteration. Of the 16,305 samples of milk analysed no less than 1868, or 11½ per cent., were returned as adulterated. There is little doubt, however, that many samples passed as genuine were probably watered so as to be just within the limits of average quality. Such specimens of milk can only be dealt with by fixing a fair but not too low standard. Bread appears to have been tampered with only to the extent of rather less than 1 per cent. of the samples examined. The percentage of adulterated samples of butter fell last year to 10·4 whereas in the previous report it was 13·7. With the exception of 1888 this is the lowest record since the passing of the Act. Of 1724 samples of coffee examined 180, or 10·4 per cent., were condemned, a result which, compared with previous records, shows a distinct improvement; 29 samples of sugar were condemned out of the 397 samples

analysed. This adulteration related chiefly to the use of colouring matter with beet sugar to imitate Demerara crystals. The practice of adulterating pepper to a very considerable extent appears to have very sensibly diminished, since only 10 samples were condemned out of a total of 1609 analysed; 50 samples of wine were passed except 1, which was a British sherry proved to contain no alcohol, but composed of sugar, a little essence, and bisulphide of soda. The only claim to sherry was its colour. About 7 per cent. of the samples of beer taken were condemned on account of excess of salt, and there were cases also in which salicylic acid had been used as a preservative. Notwithstanding that an exceedingly low standard of strength for spirits was fixed by the Sale of Food and Drugs Act there is evidence of much adulteration of spirits; 17·7 of the samples were condemned on this score. The penalties imposed amounted to £524 odd, representing 466 cases in which proceedings were instituted, 404 of which were successful. Of 1116 samples of drugs submitted for analysis, 125, or 11·2 per cent., were unsatisfactory. These were chiefly nitre, rhubarb, cream of tartar, and sulphur. Ten per cent. of the samples of ginger collected proved to be fraudulently mixed with spent ginger. Lastly, it is interesting to note that of the 39,516 samples analysed in 1894, all but 174 were obtained by officers of local authorities. The result showed adulteration to the extent of 10·3 per cent. The result of analysis of samples obtained by private purchase showed adulteration to the extent of 27·6 per cent. The Act is working very fairly well considering the difficulties that are connected with its administration, but we still urge that the results would be even better if there were less apathy on the part of many of our administrative bodies and if more samples were taken per head of the population. We should like to see, moreover, the barrier between Somerset House and the public analyst broken down, the question of standards settled, and an improved system of taking samples adopted. But these are points which we hope will be dealt with by the Select Committee on Food Products Adulteration, who have nearly finished their labours.

WATER.

Recent abnormal seasons, as, for example, a period of unusual drought followed by exceptional cold, have had a large share in bringing the question of metropolitan water-supply into peculiar prominence and have involved, of course, a more expanded treatment of the subject in the annual report of the Local Government Board. Increased storage is the question chiefly affected. Major-General Scott says that if reservoirs were constructed on a large scale for the purpose of impounding the river water during freshets the influence of the minimum or dry-weather flow of the Thames as a factor limiting the capacity of the river for the supply of the metropolis would be to a considerable extent eliminated.

The quantity of water daily abstracted for the use of the metropolis is but a small fraction of the average discharge and the withdrawal of the quantity taken by the companies can have no appreciable effect on the *régime* of the river in a general sense. This does not obtain, however, in the case of the Lea, although here also the impounding of water during freshets would avoid any serious reduction in the volume of discharge. On Aug. 8th, 1894, the East London Water Company were compelled to shut off the supply to three-fourths of the houses within their district between 8 P.M. and 6 A.M., which was continued until Oct. 28th, when in consequence of rain the water-supply rose rapidly and the constant supply was reverted to. Inadequate provision for storage was the cause of the failure to keep up the supply. The completion of the reservoirs provided for in the East London Company's Act of 1894 will about double the storage capacity available, but, as Major-General Scott observes, there is no finality in such works with a population increasing in that district at the rate of 20,000 persons per annum, so that the necessity for looking forward and beyond the scope of the authorised works will after a few years become apparent. In any case, all possible contingencies—drought and frost—must be provided against, and in adopting a basis for calculation the probable yield of water in normal weather is obviously no datum. All these are interesting observations connected with the projected new schemes for obtaining water further afield. The system of constant supply, we are glad to learn, has been considerably extended during the year and much waste has been prevented by a system of inspection and by the installation of waste indicators. To provide against emergency cisterns must still be employed, but a draw-tap on the supply-pipe should, as we have urged before, be used for drinking and cooking purposes. Interconnexion of the mains of several companies as a provision against the failure of one source of supply has been effected to some extent, but not so fully as is desirable.

Professor Frankland's report on the quality of the supply is full of interesting reading. He finds that the organic matter present in the river waters as delivered in London was to a very large extent of vegetable origin. On the whole, the degree of organic purity has been maintained. The report contains some interesting observations on the conditions most inimical to bacterial life in river water. The number of microbes in Thames water is determined mainly by the rate of flow of the river or, in other words, by the rainfall, and but slightly, if at all, by either the presence or absence of sunshine or of a high or low temperature. It is true that sunshine, as Marshall Ward has shown, is a powerful germicide, but it is probable, Professor Frankland thinks, that the germicidal effect is greatly diminished, if not entirely prevented, when the solar rays have to pass through a comparatively thin stratum of water before they reach the living organisms. He then proceeds to show the efficiency of the system of sand filtration adopted by the water companies, in regard to the removal of organisms. The conditions of highest efficiency are next considered. It was impossible to refer to this subject without alluding to the admirable series of experiments undertaken by Mr. G. W. Fuller at the instigation of the State Board of Health of Massachusetts. The results of this investigation, coupled with those of Professor Frankland, are doing great service in demonstrating what really are the laws of water filtration. They afford, as Professor Frankland observes in his concluding remarks, fairly conclusive data for the guidance of engineers of the London water companies in all ordinary seasons; but the severe weather which prevailed in England a year or so ago has brought to light some entirely novel phenomena affecting the filtration of water which will require to be carefully studied and which are at the present moment engaging his earnest attention. The results will be awaited with deep interest.

THE NILE CAMPAIGN.

ALL arrangements connected with the advance of the Anglo-Egyptian force seem to be progressing favourably, and the news that the force was advancing southward is stated to be already productive of good effects in giving confidence, on the one hand, to those tribes who are friendly and looking forward to being emancipated from the tyrannical rule of the Dervishes, and, on the other, in probably drawing off Osman Digna's force from the beleaguered garrison of Kassala in the directions of Suakim and Dongola. A Dervish force has reached Kokreb, a station fifty miles to the west of Suakim. The telegraph wire between Korosko and Murat Wells has been again cut, and the Dervishes are reported to be in considerable numbers on the Assouan-Berber road threatening the Murat post and probably intending, also, to make an attack on the Egyptian fort Heliab on the Red Sea about 200 miles north of Suakim. The garrison at Suakim has been strengthened, but it appears highly probable that the force at that station must be still further increased, and this could be easily and promptly done by sending there some vessels from the British fleet and a native force from India, which might not only aid in the defence of Suakim, but take part in the expedition in other directions if necessary. Some portions of our Indian army are admirably adapted for a campaign in Egypt; they are well suited for the climate and the work, and thoroughly disciplined and reliable. No doubt a very marked change has been effected in the Egyptian army under the discipline and leadership of English officers, and it may be confidently expected that the Egyptians will give a very different account of themselves under present conditions from what has hitherto sometimes been the case in their fights with the Arabs. Still, it has to be borne in mind that Osman Digna's troops are a very brave and formidable

enemy, attacking their foes with a daring and fanatical impetuosity which the Egyptians might not be able to resist. The Soudanese portion of the Egyptian force, however, have always proved themselves in point of courage excellent and reliable troops in the field. But a contingent of specially selected troops from the native army of India is specially adapted, as we have said, to the country and this kind of warfare, and with a comparatively small number of English battalions added to the Egyptian force there would be no reasonable doubt whatever of the success of the expedition. It seems possible that an officer of high rank and proved capacity on Egyptian fields may yet be sent out from this country in supreme command of the expedition, and we quite concur with the writer of "Egypt and its Frontier" in the *Fortnightly Review* for this month in his very high estimate of Sir Redvers Buller's special and proved qualifications for such a post. Meanwhile, railway extension works are being actively carried out and very large quantities of railway plant and supplies have been pushed forward. Some engineering experts have also arrived at Wady Halfa *en route* for Sarras in order to examine and report on the work that has been done in this respect. The heaviest task has, of course, during the present stage of the expedition, fallen upon the transport department. The heat has of late been great—unusually great for the season, it is stated—and dust storms have occurred; but the force is in good health and spirits, and generally satisfactory progress has been, and is being, made in all that concerns the expedition. The greatest activity has prevailed at the Royal Arsenal, Woolwich, in fitting out and sending off stores for Egypt and the campaign. From all we can learn as to the efforts that have been made in Egypt and this country the medical and hospital services of the expedition should be well supplied with men and material. The expedition is no doubt an undertaking of difficulty, and altogether, apart from fighting, it may cost much in the way of loss of health and money. But the province of Dongola is a fertile, rich, and paying part of the Nile country, and the rule of the Dervishes is a tyrannical one. It is, after all, by opening out the communications—by means of railways and other facilities for commercial intercourse—between the Nile provinces and Egypt and Cairo that real progress will be made and peace established on a satisfactory basis.

LITERARY INTELLIGENCE.—An English translation of Dr. P. G. Unna's exhaustive treatise on the Histopathology of Diseases of the Skin, at the hands of Dr. Norman Walker of Edinburgh, is about to appear. The German edition, a volume of some 1200 pages, deals in a more exhaustive manner than has hitherto been attempted with the histological changes found in almost every known disease of the skin, and forms a monument to the accuracy, energy, and painstaking industry of the author. It marks a fresh step in the scientific study of skin diseases from an anatomical standpoint. But Dr. Unna's German, though of course good, is not of a kind which is easy to be read by those who are not perfectly familiar with the language. An English rendering of the work will therefore be welcome among English-speaking people. Numerous additional illustrations will be included, drawn from Dr. Unna's collection of specimens.

THE DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—An ordinary meeting of this society was held on March 25th, Dr. P. H. Pye-Smith, F.R.S., President, being in the chair. The following cases, &c., were exhibited:—The President: Photographs of Unusual Warts of the Face limited to the Tract of the Fifth Nerve and complicated by a Nævus which appeared before the Warts, the patient also having similar warts on the mucous membrane of the palate. Dr. T. D. Savill: (1) Morphœa Nigra in a girl aged thirteen years; and (2) (for Mr. Tay) Lupus Verrucosus. Dr. A. Eddowes: Lupus Erythematosus. Dr. P. S. Abraham: (1) Multiple Lupus (for Mr. Bidwell); (2) Prurigo of Hebra; (3) Vesicating Erythema; and (4) Pemphigus in a woman aged eighty years; also three cases for diagnosis. Dr. Eddowes read a paper on Warts on the Feet. Dr. Stowers exhibited microscopic sections of the Skin Eruption of Variola. The President, Dr. Bowles, Dr. Savill, Mr. Hare, Dr. Abraham, Dr. Eddowes, and Dr. Stowers took part in the discussions which followed. It was announced that the next meeting would take place on April 22nd.

THOMAS WAKLEY,

THE FOUNDER OF "THE LANCET."

A BIOGRAPHY.[1]

CHAPTER XV.

The Terrible Accusation of Malpraxis against Mr. Bransby Cooper.—The Style and Matter of the Libel.—Wakley Defends himself Personally.—A Legal Point decided in his Favour.—The Evidence for the Defence.

IN the preceding chapter it was indicated that the summary of the Hospital Reports as given by Wakley and his staff in THE LANCET would be limited to a consideration of the reports printed up to the year 1828. The reason of that limitation is as follows. On March 29th, 1828, there appeared in these columns the report of a case of hospital malpraxis, which led to the most sensational lawsuit that Wakley was ever engaged in, not excepting his suit against the Hope Fire Assurance Company. This was the case of Bransby Cooper *v.* Wakley. The report out of which the case arose was the most outspoken denunciation of a piece of hospital malpraxis possible to conceive. It was written in so sensational and even malignant a style that the harmfulness, nay, the terrible mischief, of sensational journalism was as remarkably illustrated by it as was the power for good of a strong vindication of the rights and usefulness of publicity. It was at once the very best and the very worst that such a report could be. To the public it did the greatest good. To the medical profession it did both good and evil. It inflicted a serious blow upon the prestige of the hospital surgeons. But the widespread repudiation by the rank and file of the profession of the systems that could sanction such treatment as was alleged to have been meted out to Mr. Bransby Cooper's patient did public honour to the feelings of medical men. On the whole the good may be said to have outweighed the evil. To the individuals concerned no half measures were possible. The plaintiff, Mr. Bransby Cooper, was inferentially called a murderer, and the defendant to justify his attitude followed the report by a leading article saying that he cared nothing for the result, but maintained the accuracy of his words, and not only his right but his duty to publish them.

The operation in question took place at Guy's Hospital, and was a lithotomy performed by Mr. Bransby Cooper, then a surgeon to the institution of three years' standing. The patient was a strong, middle-aged countryman, for whom the procedure of cutting for stone should not under ordinary circumstances have had any particularly grave risk. A definite rate of mortality occurred in such cases, and that should have been the measure of the risk. The operation, however, took an enormous time and resulted fatally. Was this time consumed in honest attempt to combat extraordinary difficulties—in which case the unlucky surgeon would have commanded the sympathies of the medical profession and the public alike? Or was it frittered away in unsurgical bungling? The article in THE LANCET left no doubt in the reader's mind what was the conclusion of the writer.

The report was headed:—

THE OPERATION OF LITHOTOMY BY MR. BRANSBY COOPER WHICH LASTED NEARLY ONE HOUR!

A footnote to the title was as follows: "The following passage occurs in John Bell's great work on surgery: 'Lon

[1] Chapters I., II., III., IV., V., VI., VII., VIII., IX., X., XI., XII., XIII., and XIV. were published in THE LANCET, Jan. 4th, 11th, 18th, and 25th, Feb. 1st, 8th, 15th, 22nd, and 29th, March 7th, 14th, 21st, and 28th, and April 4th respectively.

and murderous operations, where the surgeon labours for an hour in extracting the stone, to the inevitable destruction of the patient'"; while the opening passages of the report show well the spirit in which it was conceived and written.

"We should," it ran, "be guilty of injustice towards the singularly gifted operator, as well as to our numerous readers, if we were to omit a full, true, and particular account of this case. It will doubtless be useful to the county 'draff' to learn how things are managed by one of the privileged order—a hospital surgeon—nephew and surgeon, and surgeon because he is 'nephew.' The performance of this tragedy was nearly as follows:—"

The account which followed was short but horrible, and its horror was accentuated by the dramatic brevity of the recital. The word dramatic is used advisedly, for the report was cast in dramatic form. It was divided into Act 1 and Act 2, while the result of an examination of the body after the death of the patient was added as an epilogue. The first Act set out the preliminary steps of the operation, which took twenty minutes, and clearly insinuated that the original incision having been wrongly made the operator lost his proper appreciation of the anatomical geography of the region and attempted violently to effect a passage with his forceps where no incision had cleared the way—that, in fact, in his attempts to reach the bladder he made a false passage. The second Act, stated to have lasted half an hour, accused the operator of having hopelessly lost his head. It described him as calling for all forms of instruments, notably for one, a scoop, that must have been useless until the foreign body was actually located; as asking for the assistance of his colleagues and even his dresser; as complaining in front of the patient, of course unnarcotised, of his utter inability to understand the cause of his own terrible failure to extract the stone; and, finally, when at last the operation was over, of attempting to explain the difficulties to the appalled assembly of surgeons and students while the conscious and dying patient still lay bound upon the operating table. No more terrible picture of incompetency, of want of skill, want of nerve, and want of heart could be imagined than the picture that was drawn. The epilogue to this terrible tragedy was in keeping. A brief description of the parts concerned in the operation was followed by the most unmistakable insinuation that the reason why Mr. Bransby Cooper had failed to extract the stone from the patient's bladder was because his forceps had not at first been in the bladder at all.

Although this report was brief it contained a terrible indictment of Mr. Bransby Cooper and also of Guy's Hospital, at that time possessing the first reputation in the kingdom for surgical practice. Stripped of all verbiage and raising every insinuation to the dignity of a statement—which no one could have read the article without doing—the gist of THE LANCET report was as follows: That the authorities of Guy's Hospital had elected Mr. Bransby Cooper upon their staff because he was Sir Astley Cooper's nephew; that he was an unskilful surgeon, and had consequently killed a patient by his gross mistakes during the performance of an operation; that he was so concerned at the public exhibition of ignorance which he felt himself to be making that he behaved with brutal callousness to the unfortunate sufferer. (It must not be forgotten that we are writing of the days when anæsthetics were unknown and when, therefore, a premium was set upon rapidity of operation; while anything like a consultation in front of a conscious patient was held to be grossly unprofessional and a grave confession of weakness.) Nepotism on the part of the management, malpraxis on the part of the officer—these had been Wakley's outspoken and repeated accusations against those responsible for the management of the London hospitals. Time after time he had said that these two factors were working secretly for ill, and equally often he had promised that any mischief so produced should be dragged into the light of day. This was a unique occasion for keeping his word. *One* set of circumstances proved him right in *both* of his recurrent accusations. He printed those circumstances in a shape which could have left no doubt that he believed in the righteousness of his action, and he referred to them subsequently in articles even severer than the original report, and designed to open the eyes of the country "draff," as the metropolitan magnates of those days contemptuously designated their provincial brethren.

Mr. Bransby Cooper had no alternative but to bring an action against Wakley. If he had desired to do otherwise it is certain that those responsible for the medical and administrative management of the charity would not have permitted him, but he never had any doubt as to his course. He felt that his back was against the wall and that if he could not beat off the foe he was a ruined man, for the article in THE LANCET had been widely copied into the lay press, and a storm of popular comment was blowing round the names of Wakley, Bransby Cooper, Sir Astley Cooper, THE LANCET, and Guy's Hospital. The case originally stood to be heard in the Court of King's Bench on Oct. 29th, 1828, but was postponed at Mr. Brougham's request, made on Wakley's behalf, until Dec. 12th, when Wakley announced his intention of defending himself in person.

At half-past nine o'clock on the morning of Friday, Dec. 12th, 1828, the case of Cooper *v.* Wakley came on for hearing in the Court of Queen's Bench before Lord Tenterden and a special jury. The case excited the most intense interest in the public mind. "Long before the sitting of the court at half-past nine o'clock," says the *Times* of Dec. 18th, 1828, "the different avenues leading to the court were so crowded that there was scarcely any possibility of forcing a passage. It was with the utmost difficulty, with the most active assistance of the constables and officers of the court that the counsel, jury, and witnesses could obtain an entrance." On the second day the approaches were still more thronged. At an exceedingly early hour persons were standing without the door anxious to obtain admission into the court. The officers, however, adopting a different course from that of Friday, kept the crowd at the outer door until the counsel, jury, and witnesses were admitted; those who had assembled merely out of curiosity were not allowed to force their entrance. Several contemporary journals, THE LANCET itself, *The Times*, *The Sun*, and *The Weekly Dispatch*, narrate a curious little incident that happened in the crowd without Westminster Hall. A gentleman who was carrying a sword-stick had the case of it crushed by the excessive pressure of the crowd. The point of the sword came out through the bulging rent in the sheath, and was forced into a by-stander's thigh. The tension of waiting and the general imagination of the fevered crowd, which was certainly set upon the consideration of horrors, gave to this small accident a serious importance, and all sorts of stories of attempts at assassination were buzzed about, the excitement not subsiding until at last the court was opened to the public.

The defendant appeared in person punctually, being assisted by Mr. Brougham and Mr. FitzRoy Kelly, while Sir James Scarlett, afterwards Lord Abinger, Mr. F. Pollock, afterwards Chief Baron Pollock, and Mr. Scarlett represented the plaintiff. Wakley brought with him into court the cast of a child representing the position in which a patient is tied when undergoing the operation of lithotomy, the bones of a full-sized pelvis, and specimens of all the instruments alleged in the libellous report to have been used by Mr. Bransby Cooper in the fatal operation. These were placed upon a table in the well of the court.

Mr. Scarlett opened the pleadings by reading the libel, which consisted of the report of the case and the leading article upon it that had appeared in the next issue of THE LANCET. The leading article added nothing to the facts in the report, but was a most damning commentary upon

the circumstances, setting out the details and calling attention to them with interjections, *nota benes*, and all sorts of verbal pilcrows. The writer, who was Wakley himself, did certainly make a disclaimer of being actuated by any malicious feeling towards Mr. Bransby Cooper, whom he was willing to believe a kind-hearted man justly popular among his pupils; but this concession was followed by a bitter summing up of the case against him. It could not be denied, wrote Wakley, that Mr. Bransby Cooper had taken nearly an hour to perform an operation whose average duration in the hands of skilful surgeons was six minutes. And it could not be questioned that he was indebted for his appointment to the staff of Guy's Hospital to his relationship to Sir Astley Cooper and not to his own skill.

Immediately upon the libel being read an extraordinary discussion followed. Sir James Scarlett rose to open the case, when Wakley insisted that as he had charged the plaintiff with unskilfulness and intended to prove the truth of his pleas he ought to proceed with his case before the plaintiff's case was gone into. Wakley's argument was ingenious and successful. While admitting that in general a plaintiff has the right to open his case and by consequence to have the general reply,

> For courts of justice understand
> The plaintiff to be eldest hand,

he submitted that there were exceptions to this rule and that his attitude of pleading justification only and not innocence placed his case in their category. The cases he relied on as precedents were three. The first was one of trespass, where the defendant admitted his entrance on to the plaintiff's property but pleaded right of way. Here the affirmation of the issue being thrown upon the defendant, Mr. Justice Bayley, a great jurist, and later a Baron of the Exchequer, held that the defendant had the right to begin. The other two were cases of assault and battery, where the defendant pleaded justification without adding "Not Guilty." In each of these cases Chief Justice Best and Mr. Justice Bayley on consultation with brother judges had severally allowed the plea. It was Brougham who supplied Wakley with the legal information necessary to make his representation to Lord Tenterden, but it can be imagined that to hear so technical a point raised by a layman created no little sensation in the court, where the general feeling was rather one of sympathy for Wakley in his foolhardy attempt to conduct his own case against one of the most powerful advocates at the Bar. Sir James Scarlett strenuously opposed Wakley's application. Lord Tenterden, after a few minutes' consultation with two of his learned brothers in the adjoining courts, decided in Wakley's favour, who immediately rose to address the jury, having secured by his successful application the right to a general reply, which, with such an opponent as the Attorney-General to deal with, meant an enormous stride towards victory. Although Wakley obtained his point by relying upon precedents he himself established a precedent while so doing, for the principle that had been allowed to prevail in cases of trespass and assault has never before been quoted as holding good in a case of libel.

Wakley's opening speech was a vindication of the view that it was of the utmost importance to the public that the management of our hospitals should be efficient and that only men possessed of the highest professional skill should be elected honorary medical officers to these noble charities. Solely to maintain a high standard in the management of hospitals and in the skill and knowledge of those empowered to treat the sick and teach the students within their walls, he had published the addresses of hospital lecturers and the reports of clinical and operative procedure at the different theatres. In the ordinary course, and with no special malice whatever, he had received a report of an operation which had taken place at Guy's Hospital on a certain day. The report told so extraordinary a story that he had abstained from printing it until he had personally been assured by the contributor that it was true word for word. He then considered that he had no other course to pursue in his public character than to print the report and take the consequences. He then called his first and, as it turned out, most valuable witness, a Mr. Partridge of Colchester.

Mr. Partridge was a voluntary witness, unknown personally to Wakley, and only asked to give evidence the very day of the trial. In Brougham's brief, a document made interesting by the fact that it has upon it the pencil notes of the eminent lawyer and his exceedingly bad sketches of the anatomical distribution of the parts concerned in the operation of lithotomy, Mr. Partridge's name does not occur, while the names of all the other witnesses are given. Mr. Partridge said that he had practised for fourteen years and was a prominent citizen in Colchester and an alderman of the borough. He had witnessed numerous lithotomies and had performed the operation eighteen times himself. He considered the report of the operation in THE LANCET correct; and he had been sitting immediately behind Mr. Bransby Cooper all the time. The operation lasted nearly an hour. Mr. Cooper appeared perplexed and hurried; he varied his instruments perpetually and irrationally; he expressed his wonder at the delay of extraction in front of the conscious and writhing patient. If the operator had known what he was about, said Mr. Partridge, he would have extracted the stone immediately.

Cross-examination, though severe, quite failed to shake this witness. His professional position was unimpeachable, and his motive for giving evidence could only be a desire to assist what he believed to be the cause of justice, for he was not a member of the staff of THE LANCET and did not know Wakley by sight and scarcely by name until the morning of the trial. Wakley's other witnesses did not turn out so well. They testified to what they saw, and this in each case amounted to a confirmation of the report, which formed the substance of the libel to be justified, but their answer under cross-examination to credit were not satisfactory. The first of these gentlemen, though a Licentiate of the Society of Apothecaries, was found to have put in false certificates to his age that he might obtain the diploma earlier than the regulations allowed. The second gentleman had succeeded Wakley as assistant to his (Wakley's) brother-in-law, Mr. Phelps of Beaminster, and was obviously interested in the issue of the case for reasons other than a desire to see abstract justice done. The third gentleman was found to be intimately acquainted with Mr. Lambert, who wrote the report. It was felt by everybody that had it not been for Mr. Partridge Wakley's selection of eye-witnesses out of a crowd of over two hundred persons would have been very unfortunate.

Mr. Lambert, the author of the report, came next. He maintained that the report was true and rather an understatement than an over-statement of facts. He had attended the post-mortem examination and there observed appearances which he considered bore out the accuracy of his report, inasmuch as they went to show that Mr. Cooper's first attempts at extraction were wrongly directed—that, in fact, he had hopelessly mistaken the anatomy of the region. Mr. Lambert did not come out well on cross-examination. He was made to confess that he had had a personal quarrel with Mr. Bransby Cooper, and that the tone of previous reports from his pen had caused his exclusion from the wards of Middlesex and St. Thomas's Hospitals. He was also revealed as the cousin of the previous witness, who had obtained the Licentiateship of the Society of Apothecaries by making a false statement on oath. As a whole he maintained the accuracy of his report. Sir James Scarlett was not able to shake him in his account of what happened, but

he was able to prejudice his evidence in the eyes of the judge, and he did so.

Mr. Lambert was followed, fortunately for Wakley's case, by two rather better witnesses, in that their purity of motive was indubitable. Both testified to the length of time occupied by the operation and to the pitiable condition of hurry and perplexity to which Mr. Bransby Cooper was reduced by his ill-success at first. Wakley's last witness was the treasurer of St. Thomas's Hospital, a Mr. Benjamin Harrison. He was a very unwilling witness who appeared on subpœna, and in cross-examination gave Mr. Bransby Cooper an excellent character as a surgeon. While, however, he swore that relationship to Sir Astley Cooper had had nothing to do with Mr. Bransby Cooper's election to the staff of Guy's Hospital, he would not swear that the gentleman who had been passed over, who was no relation to Sir Astley Cooper, but senior to Mr. Bransby Cooper, was not a better surgeon than the plaintiff, who had been preferred to him. Mr. Wakley then closed his case, and the court adjourned until the following day, Sir James Scarlett submitting that he would rather address a fresh jury than a jaded one.

(To be continued.)

THE McEWAN HALL OF THE EDINBURGH UNIVERSITY.

THIS magnificent piece of architecture, which has been in process of erection for several years, is now within a few months of its completion. The hall is part of the original plan supplied by Dr. Rowand Anderson for the new University buildings which have been constructed in Teviot-row and Park-place. For the carrying out of this part of the plan the city and University are indebted to the princely generosity of Mr. W. McEwan, M.P., who in 1888 undertook to defray the entire cost of building this great hall for the use of the University. The Senatus, in a minute passed in 1888, duly expressed their appreciation of the magnitude and splendour of the gift and on the same occasion resolved that for all future time the hall shall bear the name of its donor. The hall, it is expected, will cost not less than £60,000 or £70,000, and will be seated for 3000 persons. On its northern frontage it joins the medical buildings in Teviot-place. Its east elevation, which is semicircular in form, is now seen to great advantage by the demolition of the houses in Bristo-street. The hall stands on the site of what was formerly Park-street. The architect, keeping in view the purposes for which the hall would be used—public ceremonials connected with the University, and the conferring of degrees—has based his design on the form of the ancient Greek theatre, which, it is believed, is the best adapted for allowing the largest number of spectators to see and hear well. The shape of the hall is semicircular, with the flat side of the semicircle to the west, where are placed the organ loft and platform which is provided at the back with a series of oak stalls for professors. The hall has two walls, an outer and an inner, which allow for a corridor between them on the ground floor 12 ft. in width. There are two galleries in the upper stages, the inner wall being opened up to the interior of the hall by a beautiful arcading of thirteen bays, each 15 ft. wide and measuring 48 ft. from the floor to the top of the arch. There is a beautifully carved stone frieze and cornice at the wall-head, with above it a coved clerestory with circular windows 7 ft. in diameter. The dome, which has in the centre a circular light 22 ft. in diameter, is constructed of steel and panelled with wood.

The height from floor to wall-head is 58 ft., and from floor to centre of dome 90 ft. The internal diameters of the outer and inner wall circles respectively are 134 ft. and 106 ft. From the outer circle to the back of the platform the distance is 107 ft. The platform opening is 52 ft. wide and is covered by an elliptical ceiling. The hall is to be lighted by electric light and the organ will be worked by electricity. The galleries are reached by two circular staircases in the outer circumference, each double, containing a separate stair for each gallery. From the inner circle are five doors giving access to the hall. The balustrades of the galleries, the pews in the galleries, and the panelling of the inner wall up to the level of the first gallery are in dark stained oak. The area floor is of oak, and on it the seats will be movable, with the exception of four tiers of fixed fauteuils ranged round the back of the semicircle. The principle staircase occupies the south angle of the building, and the north angle is formed by the base of the proposed campanile tower which forms part of the original design, but still remains unexecuted. Another donor is wanted to complete this part of the scheme. The tower in the plan is 270 ft. in height. For purposes of ventilation there will be a fan placed in the basement of the building. The masses of masonry on the external elevations have been disposed with telling effect. The wall is divided vertically by buttresses corresponding to the internal divisions of the hall, and standing well out from the face of the wall. Between two of the buttresses on the north-east side there is carved the following inscription.—

Hanc Aulam Academicam
Gulielmus McEwan
Universitati Edinburgensi
Libero Animo Donavit
MDCCCXCIV.

The external elevations show horizontally three divisions. In the lower, which is panelled, are the windows for lighting the corridor; the upper section is arcaded in red stone and the wall is finished by a cornice and open balustrade. The clerestory and the dome rise above these, the dome being covered with lead and surmounted by an ornamental lantern 30 feet high. The height from street level to the top of the lantern is 130 feet. In the outer circle are seven doorways for entrance and exit, the principal one being in the east elevation. There is a staircase giving access to the hall from the quadrangle of the University which is very pleasing in effect. The constructive part of the work in connexion with the erection of this hall has been finished for some time, but the opening has been retarded by the execution of an elaborate scheme of decoration. The scaffolding has now, however, been cleared away and the principal decorations are completed.

The decorative part of the work was placed by the trustees in the hands of Mr. W. M. Palin, who has now been engaged for over two years in this part of the undertaking. Mr. Palin has followed the relief as opposed to the flat method of painting in the mural decoration. His figures are executed in strong relief and his backgrounds have been given perspective depth. The dome, which is most elaborately treated, shows running round its inner edge a broad blue band, on which is inscribed in golden letters the words, taken from Scripture: "Wisdom is the principal thing; therefore get wisdom: and with all thy getting get understanding. Exalt her and she shall bring thee to honour." In the decoration of the dome the artist has endeavoured to produce on a large scale the effect of an enamelled jewel, which he has done by painting on a background of gold and using in the drapery of his figures the colours of precious stones. The dome is divided by the ribs into fifteen compartments, these being subdivided into smaller panels, the upper of which are filled with ornament in white and gold, while the lowest and largest panel in each compartment shows a seated female figure in double life size. There are thus fifteen figures in the half circle of the dome, of which thirteen are named. Reading from the left they are: "Astronomy," "Mathematics," "Poetry," "History," "Divinity," "Philosophy," "Medicine," "Oratory," "Jurisprudence," "Fine Arts," "Music," "Biology," "Physics." Over the top of the platform opening on the west wall is a large panel measuring 100 ft. across and narrowing as it ascends to the apex. On it is painted a representation of the "Temple of Fame." The composition contains eighty or ninety figures, on a scale of 9 ft., representing groups of philosophers and students conversing together or ascending steps to a raised piazza, where there is a temple in the background. At the apex of the panel three goddesses are painted representing "Science," "Art," and "Literature." The figures are in strong relief with draperies of blue, red and violet, and red and green respectively. In front of the figures are Cupids with tablets. On each side of the platform opening on the west wall is a large panel, 24 ft. by 13 ft., with a lunette above it. On the right "Minerva" is represented, draped in green and red, as the tutelary

deity of the University, seated on a marble throne in the grove of Academia receiving the gift of the building. Into one of the figures, arrayed in classic robes, standing at the sides of the steps of the throne the artist has introduced a portrait of Mr. McEwan, which is an excellent likness of the generous donor. The panel balancing this on the other side gives a representation of "Fame" as a female figure in pale green and gold seated on a throne with a trumpet in one hand and a laurel wreath in the other. An aspirant in red robes kneels in front of her while groups of men are ranged on either side. The angle panels of the arch are decorated like those alongside of them. On the right are two figures representing "Perseverance" and "Intelligence," while on the left are "Imagination" and "Experience." On the walls of the clerestory, which are painted sky blue and gold, are inscribed the names of eminent men who have been connected with the University. The carved stone frieze is very effectively picked out in gold. The ceiling of the first gallery is panelled in blue and gold, while the roof of the second is treated in a warm sepia tint. The paintings and dome decorations were finished in oil on canvas in the artist's studio and afterwards affixed to the walls and dome. The colouring has been necessarily strongly executed to allow for the mellowing influence of age.

There can be no doubt that on the completion of the McEwan Hall the University of Edinburgh will possess an academic building unequalled in any other university in the United Kingdom.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6544 births and 3814 deaths were registered during the week ending April 4th. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 20·7 to 18·8 per 1000, further fell last week to 18·3. In London the rate was 17·9 per 1000, while it averaged 18·6 in the thirty-two provincial towns. The lowest rates in these towns were 11·7 in Portsmouth, 12·2 in West Ham, 13·0 in Huddersfield, and 13·1 in Cardiff; the highest rates were 21·5 in Preston, 22·0 in Liverpool, 22·1 in Manchester, 24·3 in Salford, and 26·7 in Birkenhead. The 3814 deaths included 615 which were referred to the principal zymotic diseases, against 578 and 631 in the two preceding weeks; of these, 247 resulted from measles, 183 from whooping-cough, 68 from diphtheria, 48 from scarlet fever, 39 from diarrhœa, 30 from "fever" (principally enteric), and not one from small-pox. No fatal case of any of these diseases occurred last week in Halifax; in the other towns they caused the lowest death-rates in Portsmouth, Swansea, Preston, and Hull, and the highest rates in London, Manchester, Plymouth, Sunderland, and Birkenhead. The greatest mortality from measles occurred in Plymouth, Birkenhead, Manchester, Burnley, and Sunderland; from scarlet fever in Bolton; from whooping-cough in Birmingham, Leeds, Sheffield, London, and Plymouth, and from "fever" in Norwich and in Blackburn. The 68 deaths from diphtheria included 45 in London, 5 in Birmingham, 4 in West Ham, and 3 in Liverpool. No fatal case of small-pox was registered either in London or in any other of the thirty-three large towns. There were 23 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 4th inst., against 42, 43, and 33 at the end of the three preceding weeks; 2 new cases were admitted during the week, against 4, 9, and 2 in the three preceding weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2676, against 2764, 2773, and 2744 on the three preceding Saturdays; 186 new cases were admitted during the week, against 217, 277, and 224 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 433 to 285, in the four preceding weeks, further fell to 270 last week, and were 131 below the corrected average. The causes of 56, or 1·5 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Salford, Oldham, Sunderland, Newcastle-upon-Tyne, and in ten other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, and Liverpool.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·6 and 18·9 per 1000 in the two preceding weeks, further declined to 18·7 during the week ending April 4th, but slightly exceeded the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 10·5 in Leith and 13·4 in Edinburgh to 21·6 in Dundee and 22·2 in Aberdeen. The 545 deaths in these towns included 21 which were referred to whooping-cough, 17 to diarrhœa, 8 to measles, 6 to "fever," 5 to scarlet fever, and 4 to diphtheria. In all, 61 deaths resulted from these principal zymotic diseases, against 70 and 52 in the two preceding weeks. These 61 deaths were equal to an annual rate of 2·1 per 1000, which was 0·8 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had declined from 35 to 21 in the three preceding weeks, were again 21 last week, of which 13 occurred in Glasgow and Aberdeen. The deaths from measles, which been 13 and 6 in the two preceding weeks, rose again to 8 last week, and included 4 in Glasgow and 3 in Greenock. The deaths referred to different forms of "fever," which had been 6 and 4 in the two preceding weeks, increased to 6 last week, of which 5 occurred in Glasgow. The 5 fatal cases of scarlet fever showed a slight further decline from the numbers recorded in recent weeks, and included 2 in Glasgow and 2 in Edinburgh. Of the 4 fatal cases of diphtheria 2 were returned in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 115 and 107 in the two preceding weeks, further declined to 87 last week, and were less than half the number in the corresponding period of last year. The causes of 37, or nearly 7 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the three preceding weeks from 28·3 to 24·8 per 1000, rose again to 25·5 during the week ending April 4th. During the thirteen weeks of last quarter the death-rate in the city averaged 25·3 per 1000, the rate during the same period being 19·5 in London and 17·7 in Edinburgh. The 171 deaths registered in Dublin during the week under notice showed an increase of 5 upon the number in the preceding week, and included 8 which were referred to the principal zymotic diseases, against 7 in each of the two preceding weeks; of these, 2 resulted from measles, 2 from diarrhœa, 1 from small-pox, 1 from diphtheria, 1 from whooping-cough, 1 from "fever," but not one from measles. These 8 deaths were equal to an annual rate of 1·2 per 1000, the zymotic death-rate during the same period being 3·7 in London and 1·3 in Edinburgh. The fatal cases of scarlet fever, which had been 4, 1, and 2 in the three preceding weeks, were again 2 last week. The 2 deaths referred to diarrhœa were within one of the number in the preceding week, while the mortality from diphtheria and whooping-cough corresponded with that recorded in the previous week. The fatal case of small-pox was the first registered within the city since January last. The 171 deaths in Dublin last week included 26 of infants under one year of age, and 48 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons exceeded those recorded in recent weeks. Two inquest cases and 3 deaths from violence were registered; and 64, or more than a third, of the deaths occurred in public institutions. The causes of 9, or more than 5 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING MARCH, 1896.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality during March in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious disease in the metropolis during last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 8·4 per 1000 of the population, estimated at 4,435,955 persons in the middle of this year. In the three preceding months

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON—MARCH, 1896.

(Specially compiled for THE LANCET.)

Sanitary Areas.	Estimated population in the middle of 1896.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.												
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
LONDON	**4,435,955**	**22**	**1294**	**982**	**1**	**147**	**3**	**29**	**383**	**—**	**2861**	**8·4**	**2**	**552**	**69**	**193**	**386**	**—**	**27**	**1**	**32**	**1262**	**3·7**	**6601**	**19·4**	**140**
West Districts.																										
Paddington	123,942	—	33	17	—	2	—	—	5	—	57	6·0	—	21	1	6	9	—	—	—	—	37	3·9	172	18·1	159
Kensington	167,993	1	59	26	—	2	—	—	18	—	106	8·2	—	25	2	6	10	—	—	—	—	43	3·3	245	19·0	160
Hammersmith	111,246	—	20	28	—	4	—	2	6	—	60	7·0	—	10	2	4	7	—	—	—	—	23	2·7	147	17·2	165
Fulham	124,029	—	17	47	—	5	1	—	3	—	73	7·7	—	19	3	9	8	—	1	—	—	40	4·2	188	19·8	140
Chelsea	120,815	1	29	15	—	8	—	—	3	—	66	8·5	—	10	1	1	11	—	2	—	1	26	3·4	158	20·4	178
St. George Hanover-square	73,054	—	9	12	—	1	—	1	3	—	26	4·6	—	5	—	2	1	—	1	—	1	10	1·8	86	15·3	149
Westminster	53,596	—	15	14	—	3	1	—	4	—	37	9·0	—	2	1	2	1	—	—	—	2	8	1·9	70	17·0	125
St. James Westminster	22,735	—	5	2	—	—	—	1	—	—	8	4·6	—	5	—	—	1	—	—	—	—	6	3·4	28	16·1	180
North Districts.																										
Marylebone	136,239	—	36	19	—	2	—	—	9	—	66	6·3	—	53	—	7	6	—	—	—	2	68	6·5	271	25·9	158
Hampstead	79,831	—	29	25	—	4	—	—	4	—	62	10·1	—	8	—	3	1	—	—	—	1	13	2·2	62	10·1	98
St. Pancras	233,347	—	63	52	—	8	—	—	21	—	134	7·5	—	18	6	16	3	—	—	—	2	45	2·5	324	18·1	119
Islington	340,007	7	80	57	—	11	1	3	27	—	186	7·1	—	68	—	17	36	—	3	1	1	126	4·8	551	21·1	162
Stoke Newington	36,329	—	10	7	—	—	—	—	4	—	21	7·5	—	—	—	2	—	—	—	—	—	2	0·7	32	11·5	18
Hackney	219,834	3	79	34	—	8	—	—	21	—	145	8·6	—	7	2	5	25	—	—	—	5	44	2·6	284	16·8	145
Central Districts.																										
St. Giles	37,170	—	6	3	—	1	—	—	3	—	13	4·6	—	7	—	1	3	—	1	—	—	12	4·2	62	21·8	177
St. Martin-in-the-Fields	13,294	—	3	—	—	1	—	—	—	—	4	3·9	—	1	—	—	—	—	—	—	2	3	2·9	16	15·7	214
Strand	22,008	—	9	2	—	—	—	—	—	—	11	6·5	—	5	1	—	—	—	—	—	—	6	3·6	40	23·7	80
Holborn	31,940	—	10	5	1	1	—	1	3	—	21	8·6	—	8	—	1	2	—	—	—	1	12	4·9	59	24·1	149
Clerkenwell	64,762	—	28	18	—	4	—	1	9	—	60	12·1	—	11	—	4	1	—	—	—	1	17	3·4	113	22·8	187
St. Luke	40,362	—	6	5	—	4	—	1	8	—	24	7·8	—	4	1	2	4	—	—	—	1	12	3·9	86	27·8	111
City of London	32,845	—	5	3	—	—	—	—	3	—	11	4·4	—	1	1	1	1	—	1	—	—	5	2·0	55	21·8	116
East Districts.																										
Shoreditch	122,678	—	34	33	—	5	—	1	26	—	99	10·5	—	26	4	8	22	—	1	—	—	61	6·5	223	23·7	140
Bethnal Green	130,282	—	46	16	—	4	—	—	9	—	75	7·5	—	20	4	4	38	—	2	—	1	69	6·9	288	28·8	176
Whitechapel	76,143	1	25	25	—	2	—	1	1	—	55	9·4	—	3	1	3	7	—	—	—	—	14	2·4	121	20·7	161
St. George-in-the-East	45,046	—	18	12	—	—	—	—	2	—	32	9·3	—	1	4	4	3	—	—	—	—	12	3·5	75	21·6	86
Limehouse	56,770	—	17	30	—	2	—	—	8	—	57	13·1	—	3	1	7	9	—	—	—	—	20	4·6	103	23·7	139
Mile End Old Town	108,645	1	44	49	—	9	—	—	12	—	115	13·8	—	4	5	6	12	—	2	—	1	30	3·6	157	18·8	124
Poplar	172,319	2	56	49	—	11	—	—	17	—	135	10·2	—	9	3	4	41	—	3	—	2	62	4·7	275	20·8	151
South Districts.																										
St. Saviour Southwark	26,429	—	15	4	—	1	—	—	2	—	22	10·9	—	3	—	1	2	—	—	—	—	6	3·0	38	18·8	169
St. George Southwark	60,276	1	19	12	—	3	—	1	8	—	44	9·5	—	11	4	3	7	—	1	—	1	27	5·8	118	25·5	150
Newington	120,211	—	38	23	—	1	—	3	14	—	79	8·6	—	14	2	6	9	—	1	—	3	35	3·8	201	21·8	169
St. Olave Southwark	13,147	—	7	1	—	1	—	—	3	—	12	11·9	—	1	1	1	4	—	—	—	—	7	6·9	14	13·9	121
Bermondsey	83,669	—	16	6	—	3	—	1	7	—	33	5·1	—	10	2	1	12	—	—	—	—	25	3·9	153	23·8	141
Rotherhithe	41,064	—	10	7	—	2	—	1	4	—	24	7·6	—	8	—	2	2	—	1	—	—	13	4·1	62	19·7	128
Lambeth	267,211	3	80	46	—	1	—	1	26	—	157	7·1	1	37	4	4	12	—	1	—	—	59	2·7	399	18·1	112
Battersea	168,825	—	57	38	—	4	—	2	17	—	118	9·1	—	6	2	7	9	—	—	—	1	25	1·9	198	15·3	112
Wandsworth	191,922	—	63	24	—	6	—	—	19	—	112	7·6	—	24	3	3	26	—	1	—	1	58	3·9	226	15·4	120
Camberwell	256,672	1	62	117	—	9	—	2	27	—	218	11·1	—	38	3	24	22	—	2	—	—	90	4·6	381	15·4	124
Greenwich	177,286	—	70	65	—	10	—	4	19	—	168	12·4	1	27	1	9	16	—	1	—	2	57	4·2	271	19·9	167
Lewisham (excluding Penge)	84,995	—	28	14	—	2	—	—	1	—	45	6·9	—	5	—	3	2	—	—	—	—	10	1·5	76	11·7	81
Woolwich	43,232	—	10	6	—	—	—	—	2	—	18	5·4	—	3	2	1	—	—	—	—	—	6	1·8	47	14·2	68
Lee	39,564	—	7	2	—	1	—	1	1	—	13	4·3	—	2	—	1	—	—	—	—	—	3	1·0	39	12·9	134
Plumstead	64,203	1	21	12	—	1	—	—	3	—	38	7·7	—	9	2	—	2	—	1	—	—	15	3·0	77	15·6	120
Port of London	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 38 cases of membranous group.

† Including deaths from membranous croup.

the rates had been 11·5, 10·3, and 8·8 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in St. George Hanover-square, St. James Westminster, St. Giles, St. Martin-in-the-Fields, City of London, Bermondsey, and Lee; while they showed the largest excess in Clerkenwell, Mile End Old Town, Limehouse, St. Saviour Southwark, St. Olave Southwark, Camberwell, and Greenwich. The prevalence of small-pox in London during March corresponded with that in the preceding month, the 22 cases notified including 7 in Islington, 3 in Hackney, 3 in Lambeth, and 2 in Poplar sanitary areas. The Metropolitan Asylum Hospitals contained 33 small-pox patients at the end of March, against 75, 68, and 45 at the end of the three preceding months; the weekly admissions averaged 7, against 13 and 6 in the two preceding months. The prevalence of scarlet fever in London showed a further decline during March; this disease was proportionally most prevalent in Hampstead, Strand, Clerkenwell, St. George-in-the-East, Mile-end Old Town, St. Saviour Southwark, St. Olave Southwark, and Greenwich sanitary areas. The Metropolitan Asylum Hospitals contained 2683 scarlet fever patients at the end of March, against 2708, 2814, and 2867 at the end of the three preceding months; the weekly admissions averaged 234, against 250, 232, and 258 in the three preceding months. The prevalence of diphtheria in London during March showed a very slight increase upon that recorded in February; among the various sanitary areas this disease showed the highest proportional prevalence in Fulham, Hampstead, Whitechapel, Limehouse, Mile End Old Town, Camberwell, and Greenwich. There were 704 diphtheria patients under treatment in the Metropolitan Asylum Hospitals at the end of March, against 687, 682, and 715 at the end of the three preceding months; the weekly admissions averaged 99, against 99, 103, and 99 in the three preceding months. The prevalence of enteric fever in London showed a further marked decline from that recorded in recent months; this disease was proportionally most prevalent in Chelsea, St. Luke, and Mile End Old Town sanitary areas. Erysipelas was proportionally most prevalent in Clerkenwell, St. Luke, Shoreditch, and Limehouse sanitary areas. The 29 cases of puerperal fever notified during March included 4 in Greenwich, 3 in Islington, and 3 in Newington sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas, the deaths occurring in the institutions of London having been distributed among the different sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, March 28th, the deaths of 6601 persons belonging to London were registered, equal to an annual rate of 19·4 per 1000, against 17·3, 18·4, and 20·0 in the three preceding months. The lowest death-rates during March in the various sanitary areas were 10·1 in Hampstead, 11·5 in Stoke Newington, 11·7 in Lewisham (excluding Penge), 12·9 in Lee, 13·9 in St. Olave Southwark, 14·2 in Woolwich, and 15·3 in St. George Hanover-square and in Battersea; the highest rates were 23·8 in Bermondsey, 24·1 in Holborn, 24·6 in St. George-in-the-East, 25·5 in St. George Southwark, 25·9 in Marylebone, 27·8 in St. Luke, and 28·3 in Bethnal Green. During the four weeks of March 1262 deaths were referred to the principal zymotic diseases in London; of these, 552 resulted from measles, 386 from whooping-cough, 193 from diphtheria, 69 from scarlet fever, 32 from diarrhœa, 27 from enteric fever, 1 from an ill-defined form of continued fever, and 2 from small-pox. These 1262 deaths were equal to an annual rate of 3·7 per 1000; among the various sanitary areas the lowest death-rates from these diseases were recorded in St. George Hanover-square, Westminster, Stoke Newington, Battersea, Lewisham, Woolwich, and Lee, and the highest rates in Marylebone, Islington, Holborn, Shoreditch, Bethnal Green, Poplar, St. George Southwark, and St. Olave Southwark. The 2 fatal cases of small-pox were within one of the corrected average number in the corresponding periods of the ten preceding years; 1 belonged to Lambeth and 1 to Greenwich sanitary areas. The 552 deaths referred to measles were considerably more than double the corrected average number; among the various sanitary areas this disease showed the highest proportional fatality in Marylebone, Islington, Strand, Shoreditch, St. George Southwark, Rotherhithe, and Greenwich. The 69 fatal cases of scarlet fever were 8 above the corrected average number; this disease showed the highest proportional fatality in St. George-in-the-East, Mile End Old Town, and St. George Southwark sanitary areas. The 193 deaths from diphtheria were 77 above the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Fulham, Marylebone, St. Pancras, Clerkenwell, Shoreditch, St. George-in-the-East, Limehouse, and Camberwell. The 386 fatal cases of whooping-cough were 77 above the corrected average number; this disease showed the highest proportional fatality in Shoreditch, Bethnal Green, Limehouse, Poplar, Bermondsey, and Wandsworth sanitary areas. The 27 deaths referred to enteric fever were 8 below the corrected average number; the mortality from this disease showed no marked excess last month in any of the sanitary areas. The 32 fatal cases of diarrhœa were 23 below the corrected average number. In conclusion, it may be stated that the mortality in London during March from these principal zymotic diseases was more than 64 per cent. above the average.

Infant mortality in London during March, measured by the proportion of deaths under one year of age to births registered, was equal to 140 per 1000, and was below the average. Among the various sanitary areas the lowest rates of infant mortality were recorded in Hampstead, Stoke Newington, Strand, St. George-in-the-East, Lewisham, and Woolwich; and the highest rates in St. James Westminster, St. Martin-in-the-Fields, Clerkenwell, Bethnal Green, St. Saviour Southwark, and Newington.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-LIEUTENANT-COLONEL BLENNERHASSETT has joined the depôt of the Medical Staff Corps at Aldershot prior to his transfer to Netley as the successor of Brigade-Surgeon-Lieutenant-Colonel Evatt, who has embarked to take up the appointment of Principal Medical Officer at Hong-Kong. The following arrivals from abroad are notified:—Surgeon-Majors Archer, Donaldson, and Creagh from Bermuda; Surgeon-Captains Eckersley and Josling from Ashanti; Surgeon-Major Tidbury from Malta; and Surgeon-Captain Carter from Ceylon. Surgeon-Major E. Wilson has arrived at the Gold Coast on a tour of duty, and Surgeon-Major Hickman has been posted to the North British District. Surgeon-Colonel Preston will succeed Surgeon-Major-General Colahan as Principal Medical Officer in Ireland.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Captain Thacker, on arrival from England, is posted to the Bombay District, and Surgeon-Lieutenant Collins to the Mhow District. Surgeon-Major R. Cobb, Civil Surgeon of Patna, is appointed to officiate as Surgeon-Superintendent of the Presidency General Hospital, Calcutta, during the absence on furlough of Surgeon-Lieutenant-Colonel A. Crombie. Surgeon-Lieutenant-Colonel R. D. Murray, Civil Surgeon, Howrah, is appointed to officiate as Professor of Surgery, Medical College, Calcutta, and *ex-officio* First Surgeon to the College Hospital, during the absence on furlough on private affairs of Surgeon-Lieutenant-Colonel J. O'Brien. Surgeon-Major A. W. D. Leahy, F.R.C.S., Civil Surgeon, 24th Parganas, is appointed to officiate as Professor of Midwifery, Medical College, and Obstetric Physician, Eden Hospital, Calcutta, during the absence on furlough on private affairs of Surgeon-Lieutenant-Colonel C. H. Joubert. Surgeon-Major R. N. Campbell, M.B., is appointed to officiate as Senior Medical Officer, Port Blair, vice Surgeon-Lieutenant-Colonel D. P. MacDonald, M.D., who has been granted eight months' furlough on private affairs. Brigade-Surgeon-Lieutenant-Colonel G. Hutcheson, M.D., Bengal Medical Establishment, is granted the temporary rank of Surgeon-Colonel while officiating as Inspector-General of Civil Hospitals, Bengal, vice Surgeon-Colonel G. Ross, granted privilege leave. Surgeon-Lieutenant-Colonel P. J. Freyer, Bengal Medical Establishment, Civil Surgeon, Allahabad, retires from the service.

NAVAL MEDICAL SERVICE.

The following appointments are notified:—Deputy Inspector-Generals: G. Maclean to Hong-Kong Hospital and T. S. Burnett to Haslar Hospital. Fleet Surgeon John A. M'Adam to the *Victory*, additional, for the *Duke of*

Wellington. Staff Surgeons: George W. Bell to the *St. Vincent*; Charles W. Buchanan Hamilton to the *Penelope*, additional, for Ascension Hospital; and William G. K. Barnes to the *Australia*. Surgeons: Edward Cooper to Malta Hospital, Richard H. Way to the *Skipjack*, Frederick F. Mahon to the *Magpie*, and Ernest C. Lomas to the Portsmouth Division of Royal Marines. Surgeon and Agent: J. Cæsar to be Surgeon and Agent at Sheerness and Queenborough, in addition to Scrapsgate, East-end-lane, Leysdown, and Shellness already under his charge.

MILITIA MEDICAL STAFF CORPS.

William Kenneth Steele, gent., to be Surgeon-Lieutenant.

YEOMANRY CAVALRY.

Herts: Surgeon-Lieutenant L. Drage, M.D., to be Surgeon-Captain.

VOLUNTEER CORPS.

Artillery: 1st Norfolk (Eastern Division, Royal Artillery): Surgeon-Lieutenant R. B. Wrightson, M.D., resigns his commission. 1st Hampshire (Southern Division, Royal Artillery): Victor John Blake, M.B., to be Surgeon-Lieutenant. 1st Lincolnshire (Western Division, Royal Artillery): Lewis Walter Pockett, gent., to be Surgeon-Lieutenant. *Engineer: Fortress and Railway Forces, Royal Engineers:* 2nd Gloucestershire (the Bristol): Sidney Reginald Dyer, M.D., late Captain, to be Surgeon-Lieutenant. *Rifle:* 6th Volunteer Battalion the Royal Scots (Lothian Regiment): George Melville, M.B., to be Surgeon-Lieutenant. 1st (Cumberland) Volunteer Battalion the Border Regiment: Surgeon-Lieutenant J. Macdonald, M.D., resigns his commission. 1st Volunteer Battalion the Hampshire Regiment: Surgeon-Lieutenant J. W. Ekens resigns his commission. 2nd Volunteer Battalion the Sherwood Foresters (Derbyshire Regiment): Surgeon-Captain A. Chawner to be Surgeon-Major. 2nd Volunteer Battalion the Loyal North Lancashire Regiment: Surgeon-Captain E. M. Garstang to be Surgeon-Major. 9th Lancashire: Thomas Wilson Banks, M.B., to be Surgeon-Lieutenant.

THE ITALIANS IN AFRICA.

It is announced from Rome, through Reuter's Agency, that in spite of the force occupying Kassala having recently defeated the Dervishes, Kassala is to be evacuated by its Italian garrison, and that, in accordance with General Baldissera's orders to that effect, Colonel Stevani is falling back upon Agordat, which is about half way between Kassala and Massowah. General Baldissera's action has been based upon the view he takes of the general situation. We learn also, from the same source, some interesting intelligence regarding the Red Cross Society. It appears that in consequence of the superabundance of aid at the disposal of the Italian Red Cross Society the German and Russian societies have been requested to suspend the despatch of nurses and material to Naples for service in Abyssinia. It is evident that some difficulty or hitch has arisen regarding the operation of these societies in connexion with the belligerent forces, for it is alleged that the Italian Government has addressed an inquiry to St. Petersburg regarding the names and position of the members of the Russian Red Cross Society who are to go to Abyssinia. The *Italie*, referring to the subject, says the Italian Government, in signifying its consent to the despatch of the Red Cross Mission, gave striking proof of its respect for the duties devolving upon all civilised Governments. "We hope," the journal adds, "that the Russian Government will, in its turn, recognise its duty to confine itself to a philanthropic and humane action, which can in no way give rise to an equivocal construction. Those whom Russia is sending to the Government of the Negus must obviously be only medical men and nurses; and it is for these that authority to pass through Massowah can be and should be granted. The Russian Government could not object to any decision which the Italian Government might feel compelled to take, if only out of regard for the very natural sentiments of the nation, which would never tolerate anything else being done under the guise of philanthropy."

ARMY MEDICAL SCHOOL, NETLEY.

The seventy-second or summer session of the Army Medical School, Netley, commenced on April 2nd. The following are lists of the surgeons on probation now attending the course of instruction:—

ARMY MEDICAL STAFF.

Names in order of merit.	London marks 4600.	Names in order of merit.	London marks 4600.
E. T. F. Birrell	2740	A. J. MacDougall	2207
A. H. Morris	2308	G. B. Riddick	2135
S. A. Archer	2297	H. Hewetson	2107
E. W. W. Cochrane	2225	R. W. Clements	2000
M. Swabey	2210		

INDIAN MEDICAL SERVICE.

Names in order of merit.	London marks 4600.	Names in order of merit.	London marks 4600.
H. Walton	3186	H. R. Brown	2331
H. Ainsworth	3010	A. N. Fleming	2316
J. W. Cornwall	2883	S. P. James	2305
F. A. Smith	2635	A. E. H. Pinch	2285
J. S. Stevenson	2610	P. Dee	2283
H. A. D. Dickson	2604	F. O. N. Mell	2253
W. G. Richards	2516	S. D. Brown	2259
M. Dick	2513	F. A. L. Hammond	2223
A. Miller	2476		

MORTALITY FROM FEVER AND "KALA-AZAR" IN ASSAM.

The mortality from fever has much increased of late in Assam, and a large portion of it appears under the head of "Kala-azar"—a parasitic disease attributable to the presence of the dochmius duodenalis. We learn that a medical officer is to be appointed to inquire into the subject and the causes of "Kala-azar." There seems to be some difference of opinion as to the exact nature of the disease which has given rise to the fever mortality in Assam—whether it is due to an aggravated form of malarial fever or to the parasite in question. It is quite probable that the two diseases may coexist; in other words, that the subject of a severe form of malarial fever may be also affected with the parasite. An investigation of the matter is likely to be of interest from a scientific point of view. Are the febrile phenomena and fatality traceable to the parasitic affection only or to the influence of malaria?

THE MEDICAL SERVICE IN INDIA.

Apropos of the proposed amalgamation of the Medical Services of Bengal, Madras, and Bombay into one Service, under the direct administration and control of the Government of India, to which we have previously alluded, the *Times of India* of the 14th ult. contains a paragraph to the following effect: "The Surgeon-General with the Government of India will be the head of the amalgamated Service, and his designation will be Director-General of the Indian Medical Service. No change will be made in the condition of the officers appointed before the second examination in 1896; but from that date the appointments will be made on one general list, and officers will be liable to an appointment in any part of India. The present surgeon-generals in Madras and Bombay will retain their privileges, but continuance of these privileges to their successors will be reserved for future consideration."

THE DEFENCE AND RELIEF OF CHITRAL.

We are extremely glad to learn that an Army Order has been promulgated at the War Office with reference to the grant of a medal and clasps for the defence and relief of Chitral. The order is preceded by another in which it is stated that the Queen has been graciously pleased to approve of a new medal—to be designated "the India Medal, 1895"—being struck to commemorate military operations on the frontier of India. This medal will have two clasps, for the defence and relief of Chitral respectively, which will be issued to the troops employed in the operations connected therewith between certain specified dates. Anyone may feel proud of having taken part in either the defence or relief of Chitral, and we are glad to think that some of the members of the two medical services did not play the least distinguished part in those operations where all strove to do their duty.

THE EASTER VOLUNTEER MANŒUVRES.

Some facetious individual has said that we do not have "weather" in England, but only samples, and the truth of his remark, if tested by the period during which the Easter Manœuvres have taken place, must be admitted. On the whole, however, the weather which prevailed has been as enjoyable as that which prevails at most Eastertides, and the Volunteers who took part in the operations may be said to have spent a profitable and useful holiday. Some 26,000 men must have left London for Folkestone, Canterbury, Eastbourne, Winchester, Brighton, Shorncliffe, Sandgate, and other towns where the manœuvres took place. The Medical Staff Corps were stationed at Walmer and were quartered at the barracks in that town. Among the officers were Surgeon-

Lieutenant-Colonel Norton, commanding, Surgeon-Captain Squires, and Surgeon-Captain Harper.

THE GOVERNMENT DAIRY AT ALDERSHOT.

Some discussion took place at the last meeting of the Aldershot district council as to the proposal of the War Office to establish a dairy on the Government sewage farm at Aldershot, whence the military will be supplied with dairy produce. The general opinion was that an individual would have to be appointed as the actual vendor of milk, &c., on behalf of the Government, and the dairy and such vendor would be liable to the restrictions and regulations applicable to private dairies. No action was therefore taken in the matter.

THE MATABELE RISING.

Amid the numerous wars and military operations that are taking place at the present time the news from South Africa occupies a fairly prominent position. There has been some sharp fighting in Matabeleland between the Hon. M. Gifford's party and the natives, in which this officer and some troopers have been wounded and a few killed. There is no doubt that the wounded will be well looked after.

THE PREVENTION OF CHOLERA AMONG THE COOLIES IN ASSAM.

The *Pioneer Mail* states that the plan suggested by the India Tea Association for guarding against cholera among the labourers intended for the Assam gardens is being tried in Calcutta, where coolies enlisted for the gardens are being inoculated by Professor Haffkine's method.

VOLUNTEER MEDICAL STAFF CORPS.

Her Majesty has been pleased to approve of the disbandment of the Norwich Company, with effect from March 31st, 1896, and Surgeon-Major T. W. Richardson is allowed to resign his commission from that date, with permission to retain his rank and to continue to wear the uniform of the Corps on his retirement.

DEATH IN THE SERVICES.

Surgeon-Major Arthur Francis Sargent, M.R.C.S., L.S.A., 3rd Bombay Infantry, at Nice, on March 27th, aged forty-three. He entered the Army as Surgeon on Oct. 1st, 1877, and was promoted to the rank of Surgeon-Major in 1889. During the year 1884 he served with the Zhob Valley Expedition.

Three hundred and eleven patients were admitted to the Royal Victoria Hospital, Netley, on April 2nd, *ex* steamship *Dilwarra* from Bombay.

Correspondence.

"Audi alteram partem."

THE TREATMENT OF HEART DISEASE BY BATHS AND GYMNASTICS.

To the Editors of THE LANCET.

SIRS,—In several of the articles recently published in the English medical journals on the so-called Nauheim treatment of heart disease I find that the meritorious work of the late Professor Beneke in this branch of therapeutics has not been sufficiently acknowledged, whilst that of another well-known physician of Nauheim—namely, Dr. Groedel—has not been even mentioned; and nothing has been said about the gymnastic treatment of heart diseases having been first employed in Sweden. I will therefore be greatly obliged if you will allow me to make the following remarks.

Beneke as early as 1859 and 1861 described the effect of the Nauheim baths on heart diseases. Special papers on this subject appeared in the years 1870, 1872, and 1875, in which we find that Beneke treated not only valvular lesions combined with rheumatism but all kinds of heart diseases, and I beg to call particular attention to the fact that he found that not only was a soothing effect produced by the baths upon the heart's action but that there was also a striking improvement of the compensation in cases where no other treatment had been of any effect. The next paper on this subject was written by Dr. Groedel in the year 1878 and appeared in the *Berliner Klinische Wochenschrift*, and this was the *first* announcement "that the baths increase the energy of the heart's action," an effect which was thus expressed in the first work of Dr. A. Schott two years later: "Baths are a first-class tonic for the diseased heart." A number of papers followed, written both by A. Schott and Groedel and subsequently by Th. Schott. Among those by Groedel I will only mention: The Effect of Baths on Respiration and Circulation,[1] the Treatment of Heart Diseases,[2] Nervous Heart Diseases,[3] Bad Nauheim and the Treatment of Chronic Heart Diseases,[4] a paper on the same subject in THE LANCET,[5] and Baths in Cases of Arterio-sclerosis.[6] As regards gymnastics for heart diseases Schott's first paper appeared in 1885. But publications by Swedish physicians about the application and advantages of gymnastics in disordered circulation are of much older date. Dr. Saetherberg of Stockholm, who made use of gymnastics for cardiac lesions as early as the year 1847, described his experiences in *Hygiea* in 1862, and he was followed in the same paper by Wrettind of Gottenburg in 1867 and by Dr. Zander in the *Nord. Med. Archiv*, 1872.[7] It is undoubtedly to the late Dr. A. Schott that we owe the first employment of gymnastics in cardiac disease in Nauheim, but the modifications made by him in the Swedish system were so insignificant that it cannot be called a method invented by himself. Groedel, who a year later published good results attained with gymnastics, prefers gymnastics with Zander's machines in certain cases to manual exercises.[8] I myself have also seen the best results produced by Zander's mechanical gymnastics.

Summing up all this, we find that Beneke having devised the bath treatment for heart disease, and Swedish physicians the gymnastics, there is no real reason for giving the name of Schott's method to the two treatments combined. Dr. Schott has endeavoured to explain the effects of baths and gymnastics, and in so doing he has assisted in making both methods of treatment better known, but others, especially Groedel, have also contributed to this end. In Germany, where the course of events could be followed from the very beginning, nobody ever thinks of speaking or writing about a "Schott method," we seldom hear even of a "Nauheim method," but simply of Nauheim as a health resort for patients with heart disease.

I am, Sirs, yours faithfully,

DR. HERMANN NEBEL,
Physician and Specialist for Gymnastics at Frankfort.
Frankfort-on-the-Maine, April 2nd, 1896.

*** We are much obliged to our correspondent for recalling the work of Professor Beneke and Dr. Groedel to our recollection. In THE LANCET of Dec. 22nd, 1894, page 1515, there is a letter from an Eastbourne correspondent of a tenour somewhat similar to the above, in that it asks for justice to the claims of Sweden as the original home of the essential part of the treatment.—ED. L.

THE EFFECT OF MUSCULAR WORK UPON THE ALKALINITY OF THE BLOOD.

To the Editors of THE LANCET.

SIRS,—Although my knowledge of the subject is scarcely such as to entitle me to speak, you will, perhaps, allow me to compare the statements made in two articles which appeared in THE LANCET of March 7th with regard to the effect of muscular work upon the alkalinity of the blood. In the course of his most interesting contribution upon the effect of exercise on the secretion of urea Dr. Haig, referring to the chapter on Mental Depression and Fatigue in the second edition of his book, "Uric Acid," observes: "I then go on to point out that the effect of exercise is to lower the acidity of the urine owing to the increased excretion of acids by the skin in perspiration; that the fall of acidity, or, more accurately, the increased alkalinity of the blood, allows the passage of an excess of uric acid through it, and that this is accompanied by a fall of urea and the presence of more or less marked feelings of fatigue." Upon this assumption that the effect of exercise

[1] Berliner Klinische Wochenschrift, 1880.
[2] Ibid., 1883. [3] Ibid., 1890.
[4] Petersburger Medicinische Wochenschrift, 1893.
[5] THE LANCET, March 30th, 1895, p. 802.
[6] Deutsche Medicinische Zeitung, 1895.
[7] Cf. Beiträge zur Mechanischen Behandlung, von Dr. H. Nebel. Bergmann, Wiesbaden, 1888.
[8] Vide Groedel's Medical Guide to Nauheim, Bindernagel, Friedberg, sixth edition, 1893; English edition, 1895.

is to increase the alkalinity of the blood is based Dr. Haig's entire theory of the cause of fatigue—a theory that seems to be completely borne out by the experiments he adduces. But in the article which follows, "The Clinical Estimation of the Alkalinity of the Blood," Dr. Hutchison makes the following explicit assertion: "The effect of severe muscular work is to cause a fall in the alkalinity of the blood, this being probably due to the production of considerable quantities of lactic acid by muscular metabolism." How can these two statements be reconciled? Dr. Haig, it will be seen, attributes the rise in the alkalinity to the increased excretion of acids by the skin, while Dr. Hutchison thinks that the reverse result is probably due to the production of lactic acid by muscular metabolism. Which is the correct view? As I have said before, I can lay claim to absolutely no qualification that would entitle me to express any opinion upon the subject, but the question as to what really is the effect of muscular work upon the alkalinity of the blood is one of such great interest and importance that I may possibly be excused for calling attention to it in this instance. I am, Sirs, yours faithfully,

March 16th 1893. W. B. FOTHERINGHAM.

"THE NEW INFANTRY SWORD EXERCISE."

To the Editors of THE LANCET.

SIRS,—In a letter published in THE LANCET of March 28th Dr. Ritchie takes exception to my criticisms,[1] founded on anatomical and physiological grounds, of the new infantry sword exercise. With your permission I will reply briefly to the points he raises. I endeavoured to show that in the Masiello system—a more accurate term, I understand, than "Italian" for the newly-adopted exercise—a greater expenditure of force is necessary to effect the required movements than in the French system; that fatigue, in consequence, will ensue earlier; that the chief muscles concerned have to act at an undue mechanical disadvantage; and that rapidity, variety, and delicacy of movement are to a great extent sacrificed in order to ensure a more powerful thrust. It does not appear to me that Dr. Ritchie effectively traverses these propositions. With regard to the "on guard" position, Dr. Ritchie argues that the wider separation of the feet in the Masiello attitude allows greater rapidity in the "advance" and "retire," because a greater pressure can be exerted in the left foot in the "advance" and from the right in the "retire." I cannot agree with him. The more the feet are separated the greater is the exertion necessary in the initial stage of either movement and the less perfect is the balance. Additional exertion is therefore required to preserve the balance. If we accept Dr. Ritchie's view it should follow that with the feet still more widely separated than is prescribed in the Masiello "on guard" position the movements of "advance" and "retire" are still further facilitated. We are then brought face to face with a very obvious *reductio ad absurdum*. Dr. Ritchie admits frankly the greater exertion needed when he writes that the advantage of "greater rapidity of movement backwards from the Italian than from the French attitude" (retiring) is "well worth the extra effort entailed by the further separation of the feet." But to my mind the removal of the resistance of the left foot in retiring leads not to greater rapidity of movement so much as to loss of balance. The further the supporting leg (in this case the right) is from the line of gravity passing through the trunk, the less perfect is the balance and the greater is the effort required to maintain it. Comparisons of diagrams of the Masiello and French attitudes will make this point obvious at once. The greater the exertion the more quickly will fatigue ensue.

Next, as to recovery from the lunge. Dr. Ritchie considers that the raising of the body to the vertical position is effected by the hamstring muscles rather than by the gluteals, as I stated. I think this criticism is sound. I noticed the error before my letter appeared in print, but when it was too late to correct it. The correction makes my case stronger. It is unnecessary for me to call attention again to the mechanical disadvantage under which the hamstring muscles act and the disproportion between the two arms of the lever, for Dr. Ritchie himself points this out very clearly. As the muscles act at such a mechanical disadvantage the expenditure of force necessary to effect the recovery is very great, far greater than in the recovery from the French lunge. And for the same reason the initial velocity of the backward swing is comparatively low. By "backward swing," it must be noted, is meant the raising of the body from the inclined position forwards to the vertical attitude; beyond this the body is not allowed to swing. The chief function of the erector spinæ in this action is to preserve the rigidity of the longer arm of the lever. To the opinion that the backward swing does not increase the rapidity of recovery I must still adhere. The experiment mentioned by Dr. Ritchie only illustrates the greater force needed in recovery from the Masiello lunge. The extra exertion and the consequent fatigue again are practically conceded. Dr. Ritchie makes no allusion to the fatigue entailed on the sword arm by the extended position of the limb in the "on guard" position, and I may take it, therefore, that he concedes this point also, which, indeed, it seems impossible to question. He does not deal with the remarks I made on the movements of pronation and supination on the ground that in the Masiello system these movements are not concerned, supination being only required in one of the parries; that is to say, that all the advantages to be obtained in the French system from the various movements of the fingers and the actions of pronation and supination are thrown away in the Masiello method. The greater variety of movements, and the fact that they can be made with less expenditure of force and so entail less fatigue, seem to me, on anatomical and physiological grounds, to make the French system incomparably the more scientific of the two. I am, Sirs, yours faithfully,

Brook-street, W., April 6th, 1896. C. T. DENT.

[1] THE LANCET, Nov. 30th, 1895.

THE SANITARY INSTITUTE AND THE ISOLATION OF CASES OF INFECTIOUS DISEASE IN THE METROPOLIS.

To the Editors of THE LANCET.

SIRS,—The interesting paper on the above subject read at the sessional meeting on March 11th by Mr. Augustus Charles Scovell could not have failed to impress the audience with the importance of this subject as regards the protection of the public against zymotic diseases and consequently the reduction of the death-rate. But while I deeply appreciated the interesting discussion and the important contribution thereto by the eloquence of Dr. Thorne Thorne I was disappointed that little or nothing was said as to the working of the Notification Act. My presence as a guest made me feel some diffidence as to the etiquette of personally calling attention to the subject, the importance of which alone justifies my now drawing attention to it. Mr. Scovell, in speaking of scarlet fever in connexion with the future demands for hospital accommodation, said that "the accumulating statistics of notification ought to prove useful." And it is to this disease alone that I shall confine my comments. Mr. Scovell is right, but I feel sure as long as the Act remains as it is, and as long as even its present provisions are not strictly carried out, the Metropolitan Asylums Board will not benefit by the collected statistics as much as they desire, nor will the disease become less prevalent; nay, even the contrary effect will be produced. I am confident that the Act is not thoroughly carried out and that it wants amending so that the full benefit it was intended to convey to the public may be secured. I would ask, first, why is the Act not strictly carried out? and, secondly, what defect, if any, conduces to render it incompetent to deal with this disease as we all desire?

Now, Sirs, in answer to the first question I would say that the Act places a penalty on the head of the family which might become so severe that he deliberately, and perhaps not unnaturally, tries to avoid coming under its provisions; and owing to the notification having in many instances to go to an opposing general practitioner it is felt to be a grievance in provincial towns—where there is much prejudice against employing a medical man who is known to be in attendance on a patient suffering from an infectious disease—that one practitioner should be placed in possession of information that sooner or later leaks out (not by the medical officer of health divulging information he has officially received) and which will bring temporary loss on the notifying practitioner. That part of the question relating to the head of the family is by far the more serious. No medical man would abstain

from notifying a case of the diagnosis of which he was confident; and parents know this, so that in times of epidemics, large or small, the medical man is not sent for until some serious complication has arisen. The latter may then feel morally certain that the patient's symptoms are the sequelæ of scarlet fever, but when he is met by a negative reply to all his definite questions he may well be excused, with legal actions so prevalent, if he lets the matter drop, contenting himself with treating the present symptoms. I do not imply that honourable members of the profession, when once satisfied as to the nature of the case, would even let this fear stand in the way of duty; but I do assert that the case of a large tradesman whose keenest opponent in the trade is on the sanitary board and whom publicity of the fact of there being fever on his establishment will affect seriously (added to the fact that he is a constant and good all-round patient of the medical man) presents a combination of circumstances that may enable the medical man not to be reasonably satisfied that he has a case of scarlet fever to deal with. And in the case of the lower classes a more painful and a sadder state of things confronts the medical man. He sees a case and informs the parent it must be notified, which means that no children must go to school, causing a prolongation of the time before A and B can pass the necessary standard and take their part as partial bread-earners of the family. A and B, too, who get 2*s.* a week each and their breakfast by cleaning boots and knives before going to school, must relinquish this work for several weeks. The mother must not go out charing, &c. Is it surprising, then, that among this class the medical man rarely sees the rash or any other early symptoms? Hundreds of cases are so mild that the little patients have no medical attendance, and when they do it is for scarlatinal nephritis, dropsy, or some other sequel which has frightened the parents. The tale is always the same: they have seen no rash, noted nothing, know of no adjacent cases, and even when the desquamating parts of the body are pointed out the utmost surprise is expressed and the medical man is asked if he is certain of his diagnosis.

The answer to the second question is brief. Let the Act be so altered or amended that no general practitioner shall be eligible for the post of medical officer of health. Let an indemnifying clause be added to protect all practitioners from the annoyance of any legal action consequent on the notification of cases of infectious disease, and give protection to the public in case of their disputing the diagnosis by empowering them to demand a consultation with the medical officer of health free of charge. Make it a good action at law for libel for any member of a sanitary board to divulge information obtained under the Act; and, most important of all, insert a compensation clause so that parents shall not suffer pecuniary loss by having to isolate the sick child as well as other members of the family. I am confident with this clause every member of the community would help the profession to stamp out the disease, instead of as now spreading it far and near. Let the poor man lose nothing by the isolation of the little patient and his whole family and he will help in the matter. Increased hospital accommodation would not be necessary, and I feel sure that highly satisfactory results would shortly be obtained.

I am, Sirs, yours faithfully,

ELLIOT DAUNT, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H.

March 23rd, 1896.

"DEATH UNDER CHLOROFORM AT A DENTIST'S ROOMS."

To the Editors of THE LANCET.

SIRS,—The reasons for avoiding the sitting posture for the patient in the administration of chloroform have not, I think, been recently given.

It is clear from the exhaustive experiments of Dr. Leonard Hill[1] and of the Hyderabad Chloroform Commission[2] that the force of gravity has a marked effect upon the circulation, especially under the influence of certain anæsthetics, producing a fall of blood pressure in the carotid arteries in the vertical and sitting postures, which can be restored by placing the body in a horizontal position; also, that when the compensatory vaso-motor mechanism of the splanchnics is paralysed the sitting posture is dangerous, because it allows dilatation of the abdominal veins, emptying of the right heart, and failure of the cerebral circulation.[3] Now chloroform lowers the blood pressure and rapidly paralyses the splanchnic vaso-motor mechanism. It cannot, therefore, be safe (with our knowledge of the limits of chloroform anæsthesia) to add the lower blood pressure of the sitting posture to the lowered blood pressure and paralysed vaso-motor mechanism of chloroform narcosis.

Beside these considerations the mortality from chloroform in any position is five times that of ether.[4] Nitrous oxide and ether cause a rise of blood pressure and do not readily paralyse the splanchnics even in large doses; they can be administered together or ether can be given alone by means of Clover's inhaler, and will yield complete, quiet anæsthesia of any required duration without danger in the sitting posture. This is a matter of every-day experience, supported by all the above experiments and authorities. For these reasons—and I write in the hope that they may be more widely recognised among dental operators—I would urge very earnestly that it is not justifiable to administer chloroform for dental operations when ether can be obtained, unless the patient is prepared beforehand, laid flat upon a couch, and the risks are clearly recognised as in all sugical procedures. In my opinion cases obliging the use of chloroform in dental work are extremely rare, and if they do arise the risk to life will be reduced by such precautions.

I am, Sirs, yours faithfully,

H. BELLAMY GARDNER,

Assistant Anæsthetist to Charing-cross Hospital and to the Dental Department.

Welbeck-street, Cavendish square, W.

[1] Proceedings of the Royal Society, vol. lvii., No. 342.

[2] Lauder Brunton: Transactions of the Medical Society, vol. xiii., p. 271.

[3] Hewitt: Royal Medical and Chirurgical Society, Oct. 22nd, 1895.

[4] Hewitt: Anæsthetics and their Administration, p. 62. Neyraud: Lyons Thesis, Statistics from over a Million Cases from Seven different Authorities — Étude Comparative sur l'Éther et le Chloroforme. J. Campbell, Paris Thesis, 1894: De l'Emploi de l'Éther.

"THE DUTIES OF DIVISIONAL SURGEONS IN CASES OF INFECTIOUS DISEASES."

To the Editors of THE LANCET.

SIRS,—Mr. Harnett's letter is no answer to my inquiry, although he admits the two flagrant breaches of professional etiquette I specified. I regret to see no word of apology. Whatever he may write to the contrary, I emphatically deny having ever given him any cause for his behaviour. I am not aware that a *tu quoque* argument exonerates a man from following the well-established rules which govern the behaviour of one professional man to another. I propose to adduce several other instances of similar misconduct occurring in my practice that your readers may judge of this gentleman's procedure. Some months ago a mild scarlet fever epidemic existed here and attacked several families of the police force. In one instance the father was told to have the patients' heads shaved or cut close. This was objected to and the divisional surgeon reported the man to the inspector to enforce his prescription. It appeared to be *ultra vires*, however, and was dropped. In another instance the divisional surgeon ordered the family out into the garden at the end of a fortnight—at least, so the mother told me. I was also told that the inunction of a medicament which I had ordered had not the sanction of his approval. In a case of diphtheria the divisional surgeon got the child out of bed and made it walk to the window that he might examine the throat—surely an unnecessary punishment for being the patient of another practitioner. When this uncalled-for and irritating interference is indulged in on every possible occasion it indicates to my mind an animus which must be destructive to a man's judgment on other matters. Other divisional surgeons whom I have consulted disclaim any mission to offend professional propriety and have no such difficulties. The limits of my letter will not permit me to discuss the irrelevant matter and inaccuracies introduced into Mr. Harnett's letter. As there is no promise of amendment I shall consider it my duty for the protection of my patients and myself to call the attention of the Chief Surgeon of Police to this correspondence in the hope that Mr. Mackellar may be able to render the divisional surgeon's self-imposed duties less onerous. It is not my intention to prolong this correspondence further.

I am, Sirs, yours faithfully,

Barnet, Herts, April 6th, 1896. W. THYNE, M.B., C.M. Edin.

ACUTE CONGESTION OF THE LUNGS (?).

To the Editors of THE LANCET

SIRS,—Dr. Squire, in his interesting and instructive paper on "Some Clinical Remarks on Pneumonia," published in THE LANCET of April 4th, says, "It is an interesting point whether there are cases which justify a diagnosis of acute congestion of the lung." A case which has quite recently come under my notice seems explicable only on the assumption that such a pathological condition as active pulmonary congestion does exist. A girl aged eighteen years, who had been suffering from obscure pains in the limbs for some days previously, was suddenly attacked with dyspnœa, shivering, and cough. When seen there was loss of resonance over the lower third of the right lung, and over this same area crepitations, fine consonating râles, and tubular breathing were well marked. Vocal fremitus was not increased, nor could bronchophony be heard. The temperature was 101·9° F. Respirations were increased in frequency and the cough was very troublesome. Next day the patient expressed herself as feeling much better. The area of dulness was diminished, and by the end of forty-eight hours the right lung was quite resonant and the breath sounds had assumed the normal vesicular tone. The cough still continued and the expectoration was profuse. The morning and evening temperatures were normal, and the patient has made an uninterrupted recovery.

I am, Sirs, yours faithfully,

J. H. MARSH,

April 7th, 1896. Senior House Surgeon, The Infirmary, Macclesfield.

"THE QUESTION OF MEDICAL DEFENCE."

To the Editors of THE LANCET.

SIRS,—Now that there seems to be a general desire that we may make the Medical Defence Union a strong corporation to defend the individual rights of its members, I think many medical men would join if an undertaking was given that they would not interfere in disputes affecting personal matters between medical men. I know of a case where one medical man, a member of the Union, slandered a medical man who was not a member simply because he started a practice for himself without purchasing it, and on the writ being served it was immediately taken up by the Union. Is this fair play?

I am, Sirs, yours truly,

March 24th, 1896. PERPLEXED.

DEATH CERTIFICATES FOR TONTINES.

To the Editors of THE LANCET.

SIRS,—A man whose child dies comes to Dr. A—— for a certificate of death, which is given on the usual form for the registrar. The father being in a tontine society is entitled to £1 on the death of his child, and he therefore asks for other certificates so as to obtain this money. Dr. A—— writes out (on note-paper) a certificate as required. The registrar on being informed of this states that the payment of the money on such a certificate is illegal. Would you kindly inform me whether this is correct?

I am, Sirs, yours truly,

April 7th, 1896. A. M.

*** Section 14, Sub-section 2, Friendly Societies Act, 1875, says: "No registered society shall pay any money on the death of a person of any age without the production of a certificate of the death issued by the *registrar or other person who has the care of the register book* in which the death is registered." It will therefore be seen that the registrar is legally right, but we do not admire the by-law that places the medical man in this position.—ED. L.

THE LANCASHIRE ASYLUMS BOARD'S PENSION SCHEME.

To the Editors of THE LANCET.

SIRS,—Few will be found to congratulate the Lancashire Asylums Board on their recently formulated pension scheme. It is to be hoped that the scheme is but a tentative one, as in its present form it is in most respects extremely imperfect. Possibilities there are, truly, but certainties none. The earnest, faithful asylum official has been led to expect, after a period of from twenty to thirty years of difficult, often dangerous, and comparatively ill-paid service, a definite pension according to his service and record. It is well known that the promise of this pension was taken into account when the various salaries and values of the emoluments were fixed. Now, forsooth, he may obtain, irrespectively of his record of good and long service, between fifty-five and sixty years of age, a pension of at least one-third of his actual salary or at most of two-thirds of his salary and emoluments, but the actual amount of which depends upon the caprice or temper of the awarding body which may then be in office. Several instances have lately occurred where the amount of an attendant's pension proposed by the committee of visitors of the asylum to which he belonged has been cut down to one-half by the Asylums Board at the general meeting by a majority of members who, knowing nothing of the merits of the case, yet so voted either out of jealousy, a feeling of economy, or a rooted aversion to any pension scheme whatsoever. Even apart from these wide limits the scheme is too elastic, every provision being so arranged as to be possibly set aside or to be modified indefinitely. The minimum age at which a pension may be ordinarily granted is fixed by the Lunacy Act of 1890 at fifty years, yet this is over-ridden and other five years added in this scheme, making the minimum age fifty-five years. The age for compulsory retirement proposed in this scheme is sixty years. Few attendants on the insane are fit for active duty after fifty-five years, as long service in an asylum has without doubt a markedly deteriorating effect both mentally and physically.

One could name several counties, some of far less extent and importance than Lancashire, where definite and equitable pension schemes have been adopted and which have given general satisfaction. I am, Sirs, yours faithfully,

April 4th, 1896. LANCASTRIAN.

A MEDICAL OFFICER OF HEALTH AND THE LONDON COUNTY COUNCIL.

To the Editors of THE LANCET.

SIRS,—I should be obliged if you would give me an opinion on the following case. The solicitors of the London County Council have entered into correspondence with me and have got me to call and see them in their office at Spring-gardens. The letters and interview relate to a scheme of the Council relative to an insanitary area (Falcon-court, Borough, Southwark) under Part II. of the Housing of the Working Classes Act, 1890, a portion of the expenses in the carrying out of which the vestry of St. George's, Southwark, have agreed to pay. I am asked by the Council to (*a*) draw up death-rates, births, &c., for the past four years and make up a full report of evidence: and (*b*) to give evidence before a public inquiry, which is shortly to be made by the Local Government Board to support Dr. Hamer's evidence. The area in question is in St. George's, Southwark, for which I am "*wholetime* (?)" medical officer of health, and I have received the consent of my authority to give the evidence. I wish to know whether I would be justified in charging the London County Council a fee for the evidence and for the report of evidence, &c., drawn up in the evenings after office hours, or must I give my services gratuitously? Nothing so far has been said about any payment by solicitors or self. Some time ago I was similarly interviewed by the London County Council solicitors and asked to give evidence on (*a*) Water Bills of the London County Council, and (*b*) the amount of water necessary to flush w.c.'s. The first thing I did on calling upon the London County Council solicitors was to ask them on what terms I was to give evidence. They said *gratuitously*, and I accordingly refused the honour.

I am, Sirs, yours faithfully,

March 28th, 1896. M.O.H.

*** Our correspondent does not tell us whether in connexion with (*a*) the Water Bills of the London County Council and (*b*) the amount of water necessary to flush w.c.'s, he was asked by the Council or his own vestry to give evidence, but if the former this is the first instance of which we have heard in which the Council has refused to pay its medical witnesses. In reference to his question as to whether he would be justified in charging a fee for evidence, &c., in connexion with the

Falcon-court Scheme we think the only objection which could be raised to such action would be that his fee would be part of the expenses of the scheme, a portion of which would be paid by his own authority. We think he would do well to obtain leave from his authority to make a claim before doing so.—ED. L.

"ASSISTANTS."

To the Editors of THE LANCET.

SIRS,—Surely it cannot be maintained that the singularly unfortunate experiences of "A Sorely-tried Principal" are by any means those of the majority of medical men requiring assistance. The many difficulties with which an assistant has to contend have already been so ably dealt with by your two correspondents on this subject in THE LANCET of March 28th that it is quite unnecessary to again refer to them. I would wish, however, to emphasise the question of salary as being of still more importance. It cannot be expected that men of experience, possessing good diplomas and excellent references, will undertake to perform the often laborious and in many cases most irksome duties of assistant at the miserable salary of £6 or £7 (in-door) per month. Luckily, we junior members of the profession are not entirely dependent on these positions, and such salaries will be accepted only, I imagine, either by those but just qualified or who, by reason of intemperance &c., are unable to obtain more lucrative employment. I have always been taught that to obtain a first-class article one must go to a first-class firm and pay a first-class price. I would venture to say that if those requiring help were to adopt this principle there would seldom be grounds for such complaints as are the subject of "A Sorely-tried Principal's" letter.

I am, Sirs, yours truly,

April 6th, 1896. COUNTRY ASSISTANT.

P.S.—Would it not be interesting to know how many men and of what class will be attracted by an advertisement which offers the remunerative (!) salary of £20 (in-door) per annum!

THE BATTLE OF THE CLUBS.—XXVII.[1]

(FROM OUR SPECIAL COMMISSIONER.)

(Continued from p. 955.)

LEICESTER AND WOLVERHAMPTON.—THE POLICY OF THE MEDICAL UNIONS RECENTLY CONSTITUTED IN THESE TOWNS.

THE Medical Union movement is spreading in all directions. During the last few weeks it has been more particularly pronounced in the Midland counties. We have seen how a union has been successfully formed at Nottingham, and now we have to congratulate the profession on the constitution of similar organisations at Leicester, Wolverhampton, and Walsall. At Leicester the medical practitioners have been acting with marked circumspection. A meeting, to which all the members of the profession were invited, was held some time ago and was well attended. A union was then constituted, but it was decided to study the situation thoroughly before taking action. From the first it was evident that the position and the interests of the medical men concerned differed very widely. To discuss in common the various phases of contract or club work would occasion a great loss of time. The contract work at Leicester may be divided into three or four categories. First of all there are the twenty-seven practitioners who are attached to the Leicester Provident Dispensary. Then there are the medical officers of the friendly societies and the medical officers in the service of insurance companies. To these three categories may be added the medical men who have private medical aid dispensaries of their own. Instead of holding large meetings in which all these different questions would be treated at once a number of small meetings have taken place. Thus the Provident Dispensary medical officers have met separately and several times. The same may be said of the other two categories: the insurance company medical men and the friendly societies' medical men. When in each of these branches the practitioners concerned shall have thoroughly investigated their own position and agreed as to the possible remedies, then the whole of the profession will be brought together again. It will then be decided whether a general effort can be made along the whole line or whether the grievances shall be fought out in detail, one at a time. If so, the point of least resistance will naturally be selected for the first attack. But in so large a town as Leicester, where the problem is so complex and differs according to the various institutions, a great deal of investigation and study is absolutely necessary before a policy of action can be safely pursued. Till this policy has been definitively adopted, and till the information and the means of action have been collected and organised, the Leicester Medical Union is wisely observing a prudent silence. There is no desire to rush into print till everything is ready, but in due time there is no doubt that a good case will be put before the profession and the public and that this statement will be followed up by energetic and, let us hope, effectual action.

At Wolverhampton there used to be a medical society which collapsed from inanition some ten years ago. It was, however, reconstituted in 1894 and called the Wolverhampton and District Medical Society. It was a scientific and social society—perhaps more social than scientific. In any case it served the primary purpose of bringing medical men together. Out of the fifty borough and thirty district practitioners thirty-two were enrolled as members of this society. On Feb. 12th last, when the members of this society met, a circular received from the Incorporated Medical Practitioners' Association occasioned some discussion on the grievances arising from club practice. Dr. Armitage spoke of hospital abuse and of the competition of medical aid societies. Dr. Malet admitted the prevalence of hospital abuse, but they could not be too severe as it was so difficult to collect funds for the maintenance of in-door patients. The general consensus of opinion gravitated towards the suggestion that a provident institution managed by the medical profession should be established at Wolverhampton on somewhat similar lines to what has been done at Eastbourne. A resolution was carried to the effect that information should be obtained as to the constitution and rules of those provident institutions which had been organised in other towns by the medical profession. This information having been secured, another meeting was held on March 11th, at which Dr. Deanesley moved and Dr. Malet seconded:—

"That in the opinion of this society it is advisable to establish in Wolverhampton a provident medical association (similar to that founded at Eastbourne) for the purpose of enabling those persons who cannot afford medical attendance at the usual charges to obtain the same under conditions satisfactory both to themselves and to the medical profession."

This was carried unanimously, but the attendance was small and limited to the members of the society. It was therefore resolved that a general meeting should be convoked and all the members of the profession invited to attend. Together with this invitation a copy of the Eastbourne rules was forwarded to every practitioner. On the invitation the text of the above resolution was given, with the intimation that it would be submitted anew to the general meeting by Dr. Armitage and seconded by Dr. Rankier in order to ascertain whether the general body of local practitioners were willing to coöperate with the medical society in carrying out the proposed scheme. This general meeting took place on March 25th, and twenty-eight out of the fifty borough practitioners attended. Six other practitioners wrote letters of approval. It may be said that two thirds of the local practitioners are in favour of the

[1] The previous articles on this subject were published in THE LANCET on the following dates: (1) Aug. 24th, 1895, Brussels; (2) Aug. 31st, 1895, Brussels; (3) Sept. 21st, 1895, Portsmouth; (4) Sept. 28th, 1895, Portsmouth; (5) Oct. 5th, 1895, Eastbourne; (6) Oct. 12th, 1895, Lincoln; (7) Oct. 26th, 1895, Lincoln; (8) Nov. 2nd, 1895, Grimsby; (9) Nov. 9th, 1895, Bexhill-on-Sea; (10) Nov. 16th, 1895, Hull; (11) Nov. 23rd, 1895, Hull; (12) Dec. 7th, 1895, York; (13) Dec. 14th, 1895, Northampton; (14) Dec. 21st, 1895, Fermanagh Medico-Ethical Association; (15) Dec. 28th, 1895, Northampton; (16) Jan. 4th, 1896, Birmingham; (17) Jan. 18th, 1896, Birmingham; (18) Jan. 25th, 1896, Club Practices in Rural and Mining Districts; (19) Feb. 1st, 1896, The Formation of a Provident Medical Association at Folkestone; (20) Feb. 8th, 1896, The Manchester Medical Guild and Medical Aid Associations; (21) Feb. 15th, 1896, The Leicester and Leicestershire Provident Dispensary; (22) Feb. 22nd, 1896, The Organisation of the Profession at Leicester; (23) March 7th, 1896, Loughborough: Local Efforts Defeated by Consultants from Neighbouring Towns; (24) March 14th, 1896, Medical Aid Societies in Small Heath; Medical Clubs at Stockport; (25) March 21st, 1896, General Meeting of the Profession and the Formation of a Union at Nottingham; (26) April 4th, 1896, Nottingham; the London and Manchester Industrial Assurance Company, Limited; the Public-house Medical Aid Clubs; United Action at Lincoln.

scheme. Among the remaining third there is little or no active hostility, but mere lukewarmness. Most of the speakers were in favour of following the Eastbourne example, which had been rendered familiar to the members present by the full description published in the columns of THE LANCET. The speakers denounced the sweating of the medical profession, the lay control of medical work, the absence of a wage limit, and generally agreed as to the prevalence of the various grievances that have so frequently been exposed in this series of articles. One medical practitioner who was recently in the service of the friendly societies said he was at first opposed to the scheme because he thought that persons who could afford to pay small bills would be tempted to join an institution which the medical men themselves had organised, though they now objected to belong to the clubs or medical aid associations managed by laymen. This objection, however, would be met if a wage limit was enforced, particularly if that limit was not too high. Another speaker also feared that the creation of a provident association by the profession would tend to increase instead of reducing the prevalence of club practice. Such a provident association being supported by the whole of the profession would acquire so high a reputation that private patients would be tempted to join. Then, again, there are at Wolverhampton several practitioners who compete successfully against the clubs by adapting themselves to the needs of the working classes. Thus, when there is serious illness they undertake the charge of the case for a fixed sum, perhaps 7*s.* per week. Others maintain the 2*s.* 6*d.* fee, but they forget to charge for every other visit. Their attendance by these means does not cost more than workmen can afford. Nor, apparently, is the average cost to the workman greater than if he paid 1*d.* per week whether well or ill. In any case many workmen prefer this system to joining a medical aid club. The medical men who do this sort of practice fear, however, the probable competition of a provident society organised by the profession. Nevertheless, here again the difficulty resolves itself in the establishment of a wage limit, which, however, it is urged should be lower for Wolverhampton than for Eastbourne. When the resolution as above was put four hands only were held up in opposition. Two of these voters were the medical officers who are engaged at a fixed salary by the amalgamation of the friendly societies. One of them rose and delivered a denunciatory speech. He complained that the movement was simply an attempt to form a capitalist "ring." This association of the privileged and more fortunate members of the profession would have for policy the boycotting of medical men, who were none the less brothers in the same profession, because they were so poor that they could not sit still and wait for a practice, but were compelled by the necessity of existence to accept posts at fixed salaries in the service of friendly societies. The suggestion that a medical society which is composed in part of medical men who are in a necessitous position and have to work very hard for a modest income could be qualified as a "ring" of capitalists excited a good deal of laughter. Nevertheless, the medical profession will have to deal with the unemployed question, for it is the principal obstacle to successful organisation. A very active local practitioner with whom I discussed the Eastbourne scheme said that at Wolverhampton the profession might be divided into three categories. First, there was the young medical man who had very little work; secondly, there was the consultant; and, thirdly, the busy general practitioner. If the profession established a provident association of their own the consultant would not lose anything. The young practitioner by inscribing his name as one of the active medical officers of the association would gain a great deal. Also, was there not a risk that medical men of somewhat inferior reputation would profit by the opportunity to put their names down side by side with those who enjoyed the highest reputation and profit undeservedly by such a juxtaposition? In conclusion, he thought that the general practitioner who had many patients was likely to lose by the arrangement. Also he thought that in Wolverhampton many medical men were so lax in the observance of medical etiquette that he failed to see what guarantee there could be that the rules of the proposed provident association would be strictly observed by its active medical officers. Of course, the wage limit and the uniformity of charge form the sovereign remedy for all these doubts. As this charge would be paid to the society and not to the individual medical officers it is difficult to see how the latter could undersell each other. But the very fact that so many criticisms were made led me to the conclusion that the Wolverhampton Medical Society had, perhaps, been attempting to run before it had learnt how to walk. It also struck me that there was a tendency to put all the eggs in one basket. The formation of a provident association such as exists at Eastbourne is, after all, only one phase of the struggle, and the position of affairs is much more simple in a small fashionable watering-town than in a working-class and manufacturing community like that of Wolverhampton. Above all, there is always a tendency, all the more dangerous as it is most natural, to hasten to grapple with the evil. The desire is to at once engage in a heroic battle and win a glorious victory. The patient, slow, laborious work of organising such armies as alone can win battles is not so attractive, especially to such busy men as medical practitioners. Yet without very careful organisation disasters are likely to ensue, followed by discouragement and disbandment. It seemed to me very evident that at Wolverhampton schemes of action had not been maturely studied. The Union, such as it is, is not yet sufficiently strong, and it has only discussed the question of forming a provident association on the Eastbourne model. Will the working men readily give up the management of the medical aid organisations which they have built up step by step and to which poor men have devoted hours of gratuitous labour? An elaborate and carefully prepared argument must be drawn up by the Medical Union and submitted to these workmen, so that they may be convinced that the medical profession is not acting against but in favour of their true interests. All this takes time and much study. Institutions which have grown up in the course of years are not overthrown in a day. The formation of a medical union is all the more creditable to those who succeed in bringing it into existence as it can only be firmly established by much laborious and persistent work. It redounds to the honour of the medical profession at Wolverhampton that they should have courageously attempted this arduous task. They have, perhaps, sought to advance a little too quickly at first; but if this is a mistake it is also a proof of zeal, and if the willingness to act is there, experience will soon show which is the right road to follow.

That action is necessary the deplorable state of affairs at Wolverhampton amply proves. These evils have been denounced over and over again. Dr. Leslie Phillips called attention to this town some four years ago. He then related, and the facts were printed at the time, that Mr. Wallington had been for five and a half years senior medical officer of the Wolverhampton Friendly Societies' Medical Association. For a salary of £250 a year Mr. Wallington went through the terrible excess of work occasioned by the first two influenza epidemics. He asked for some compensation, especially as he had incurred a considerable excess of cab hire. The income of the association at that time was £1835, out of which the medical officers and locum-tenents obtained only £498. Nevertheless, the association refused to pay the cost of the cab hire, and out of his modest income of £250 Mr. Wallington was out of pocket £57 for this item alone. While the association refused to bear this extra expense caused by the epidemic the profit they made was sufficient, after paying all working expenses, to purchase and pay for land to the value of £550. It was also calculated that the actual cash paid to Mr. Wallington only amounted to 10*d.* per year per member of the friendly societies. In 1894 this association had 8759 members. Its receipts had fallen to £1369, and out of this sum it paid its medical officers £425. On questioning some of the medical men who attend the members of friendly societies they admitted that some of the lady patients wore silk dresses and sealskin jackets. There is no doubt that the usual abuses prevail at Wolverhampton as in so many other towns. The disunited condition of the profession has up to quite recently been the chief obstacle to reform. As one practitioner observed in my presence, the medical men injure each other quite as much as the clubs injure them. It is not only advisable to establish a provident medical association which, under the management of the medical profession, shall replace the existing clubs and medical aid associations, but it is necessary also to fix a minimum limit which every medical man in competing with other medical men shall be bound to respect.

A HASTINGS DISPENSARY WOUND UP.

At a meeting held at the Hastings Town Hall on Monday, Dr. B. H. Allen presiding, it was resolved on the motion of

the Chairman, seconded by Mr. Coleman, that the Provident Dispensary be wound up.

THE PROPOSED CHEAP MIDWIFERY FEES AT LINCOLN.

To the Editors of THE LANCET.

SIRS,—There surely must be some explanation of the absurdly low midwifery fees which the union of medical men at Lincoln has gone in for. Read as the "Battle of the Clubs" doubtless is at this particular epoch by the officials of the various clubs, dispensaries, &c., it will be "nuts to crack" for them to find at what low fees the Lincoln medical practitioners assess themselves. It is, moreover, manifestly worse to demand such disproportionate midwifery fees than (under pressure) to accept them. If the worry and trouble of forming a medical union only eventuate in "half-guinea midwifery" all one can say is that "the game is not worth the candle," and that it is but another instance of *parturiunt montes, nascetur ridiculus mus*. Here (a Midland town which must perforce be nameless) no contract midwifery work is taken even now under 15*s*., and in the case of the Oddfellows £1 1*s*. is the fee for attendance on primiparæ. Beyond and above all this, at various meetings of the profession in this town it has been all but unanimously agreed to that no midwifery case in any club or dispensary should be attended for a less fee than £1 1*s*., and there is absolute unanimity that that should be the minimum fee for primiparæ.

Now the low midwifery fee which the Lincoln practitioners have announced—viz., "confinements 10*s*. 6*d*., operative midwifery 15*s*."—will have a tendency to lower the contract midwifery fee to be demanded by the various medical unions throughout the country, for how can medical men "in union welded" demand (I beg pardon, "suggest") in one county a general midwifery fee of £1 1*s*. when in another only half that amount is asked? Certainly, whilst acknowledging that each town must be treated to some extent on its own merits, nevertheless this action of the Lincoln practitioners prejudges the question and tends to show that in this "Battle of the Clubs" there should be some central union or authority to fix what the minimum midwifery fee ought to be. It is, of course, pleasing to think that there is "unanimity" at Lincoln, but surely even that may be bought at too high a price or rather, as in this case, at too low a figure. It would be interesting to know what the midwifery fees in contract practice are in that town at the present time. Apparently they must be 7*s*. 6*d*., with 2*s*. 6*d*. extra for "putting on the forceps." It is, however, too serious a question to joke about, and I hope due attention will be called to the matter and the Lincoln practitioners urged to rearrange this obnoxious rule No. 5 about midwifery and demand a minimum uniform fee of one guinea, or certainly not less than a 15*s*. fee, and for all primiparæ one guinea.

Charging an extra fee (4*s*. 6*d*.) for "operative midwifery," by which term I conclude that "putting on the forceps" is generally implied—certainly the general public do not consider anything an "operation" unless "instruments" are used—I look upon as an inadequate and vexatious addendum. It is certainly likely in many instances to lead to unpleasantness with one's patients, as we shall be sure to get the credit, albeit, I hope, undeservedly, of "using instruments" to obtain the extra nine sixpences. For obvious reasons I do not sign my name, but

Remain, Sirs, yours faithfully,

April 4th, 1896. A MIDLAND MEDICAL MAN.

*** Our correspondent's letter reveals a difficulty which all have known to be present in this matter. It is difficult enough to obtain unanimity of opinion in one district, but for the present at least it must be impossible to obtain unanimity among a number of districts. Any attempt at over-centralisation as a definite tariff of fees to be maintained universally throughout the United Kingdom would probably end in failure. Special reasons will dictate special fees in different districts, and we do not think much practical harm will arise from the fact, which, after all, is a necessity and has to be faced. If the medical men in a given district are unanimous in demanding a fair rate of emolument they will obtain it. The fact that in a neighbouring district united medical opinion has decided in favour of lower emolument may certainly furnish a handle to some of the clubs for grumbling, but it cannot materially affect the position of the medical men of the place.—ED. L.

A HARD CASE.

To the Editors of THE LANCET.

SIRS,—Unless something is done by the medical authorities to abate the evils menacing the profession through the invasion of our rights by the medical sweating commercial companies, great distress and trouble will be the lot of those practitioners who continue to refuse to degrade their calling by accepting the undignified position of medical attendant to the company's assurance members. About ten years ago a practitioner in the south of London—we may call him A.—enjoying a fair amount of practice received a visit from a representative of the company and was requested to allow his name to be added to a list of those who were willing to become the paid servants of the company. Upon A. declining he was informed that he had better reconsider his determination, as there would be no difficulty in securing a medical man in the neighbourhood to accept the post, and inasmuch as the company intended to canvass the district thoroughly it was a certainty that many persons would be induced to join the medical club, and the man who would be appointed would secure a large proportion of the patients of those practitioners who refused to coöperate with the company's agents. Time proved that the company's representative was a truthful prophet. A practitioner (call him B.) residing a few yards from A. accepted the position, and a transfer of several patients from A. to B. was the result of the energetic canvass of the agents. As years have gone on the company have induced so many medical men practising close to A. to accept appointments that now poor A. is to all intents and purposes at the present moment a ruined man. His earnings have so cruelly decreased that pinching poverty has been his lot for a considerable time. His position is now most deplorable. His wife and family have scarcely a change of clothing, and to supply them with proper food and education is becoming more and more a difficulty. He is in daily dread of being sold up by his landlord, who worries him for his rent directly quarter-day arrives. Can you be surprised that he is now beginning to reflect that he has been to blame in permitting his family to suffer in consequence of his refusing to do that which he considered detrimental to the honour of his profession? Why, Sirs, should the medical authorities any longer allow men to do under cover of the protecting wing of a company that they would not dare to do in their individual capacity as private medical practitioners—viz., tout, tout, tout, to get hold of their neighbours' patients and their neighbours' living?

I am, Sirs, yours faithfully,

GENERAL PRACTITIONER.

*** The case is not a unique one. But it is our belief that a time of emancipation is approaching.—ED. L.

THE PEOPLE'S DISPENSARY, LEICESTER.

To the Editors of THE LANCET.

SIRS,—I am prepared to fight in the "Battle of the Clubs" as long as there is a bottle left to rally round, but I think that the People's Dispensary (Leicester) which is criticised by your Commissioner somewhat contemptuously has some claim to survive the general wreck—if wreckage be the order of the day—and for the following two reasons amongst others. Firstly, it is the wish and intention of the board of management to make the pay of the medical staff adequate, but it is handicapped by the competition of the wealthier "provident dispensary." Secondly, cases of abuse of the institution by persons able to pay for medical attendance at ordinary rates have only to be pointed out to the board to be remedied: this is my personal experience, for I have repeatedly refused to attend ineligible members as dispensary patients, and my action has always been upheld by the board. I am altogether opposed to the club and dispensary system, but I think common honesty demands that the fairness of the board of the People's Dispensary should be thus acknowledged.

I am, Sirs, yours faithfully,

Leicester. ALFRED CLARK, L.R.C.P. Edin.

THE ASHANTI EXPEDITION.

(BY OUR SPECIAL WAR CORRESPONDENT.)

II.[1]

Climate and Soil of the Country traversed by the Expeditionary Force.

THE belt of country stretching from Cape Coast Castle to Kumasi, the line of march which our troops covered, lies between the parallels of 5° 8′ and 6° 45′ north latitude and 1° 15′ to 1° 35′ west longitude, therefore well within the equatorial region of Western Africa. Its climate is essentially tropical and notoriously unhealthy; whilst its unsuitability as a residence for Europeans, or even West Indians, must surely be admitted in view of the fact that a death-roll of 16 and a rate of sickness equal to 50 per cent. have been the results of only some six weeks' stay there by our white and coloured troops employed during the recent campaign. From very careful observations taken every four hours, by night as well as by day, and registered by instruments that could thoroughly be relied on, the solar heat, even during the dry season (whilst the harmattan was blowing), cannot in any way be considered excessive, especially in comparison with what is felt in India or even the Soudan. Only on two occasions during the march up or down was 90° F. reached, and even this degree of heat was only maintained for a few hours in the middle of the day, the thermometer having sunk considerably by nightfall. The extreme registers were taken at the rest camp of Kwissa at 2 P.M. on Jan. 9th and also at Prahsu on Dec. 25th, 1895. Kwissa lies to the north of the Monsi Hill and is considered one of the healthiest spots *en route*. The lowest temperature ever recorded during the expedition was 68° F.; this was registered at 4 A.M. on Jan. 6th at the camp of Akusirem. The mean of all the maximum observations recorded from Dec. 15th, 1895, to Jan. 1st, 1896, gives an average highest temperature of 85° F., and that of the lowest an average of 75° F., and taking the mean betwixt these two an all-round temperature of only some 80° F. is shown—surely an amount of heat that could be endured with impunity by well-seasoned and healthy troops. It is therefore not to the amount or persistence of heat but to some other cause or causes that we must look for an explanation of the development of that calamitous form of sickness which has stricken men down, not only in this, but in every other preceding expedition to the Gold Coast. The difference between the dry and wet bulbs averaged about 3·5°. During the winter and rainy season the mean average temperature is about 80° F., and the difference then between wet and dry bulb is about 2° or 2 50°.

On the Gold Coast there are two distinct seasons: one, the dry, commences generally about the middle or end of October, and terminates at the latter part of February or beginning of March. It embraces a period of sometimes over five months, during which season the rainfall is very limited or in some years conspicuous by its entire absence. Fortunately, however, heavy thunderstorms may, and do, occur during the dry season and are very beneficial when they come. First, the heavy rains which accompany these tempests reduce the temperature 3° or 4° and relieve the oppressiveness of the air considerably. Secondly, the increased momentum given to the air by the incursion of these storms disturbs and scatters malarial germs; and, thirdly, the short, heavy downpour of rain which accompanies these "busters" washes down the land, removes any accumulation of filth, carrying it away by surface-made channels, and thence, by contributory streams, deposits it into the main river. But it does more than this, it cleanses by removing the rotting and decaying material left by the receding water on the banks of the river itself.

During the dry season the harmattan, or north-east wind, is prevalent over the Guinea Coast. Blowing as it does over the Soudan desert, it is dry and very parching in character, and has a distinct reputation for arresting vegetation, but it is supposed to be beneficial in checking malaria and fever; if this be so it is probably by drying the air (usually so humid), and thereby rendering it more respirable than it otherwise would be. Sometimes it comes on in November, and in some years it has not made its appearance till February. During this last Ashanti campaign, however, its influence was only felt (and that too sparingly) for two or three days at the end of December, and to its absence may possibly be attributed much of the sickness that has overtaken so many of our men. During the march from Cape Coast Castle to Kumasi there was an entire absence of any wind.

The wet season commences about March and ends in October. It is frequently ushered in by a heavy downpour of rain—sometimes by a tornado; but it is during May and June that these storms are most severely felt. This is supposed to be the unhealthy season; but the supposition is certainly open to doubt. Many observers consider the wet season as the healthier of the two. Experience has abundantly taught us that accumulation of stagnant water, or even the neighbourhood of rivers, is at all periods more or less unhealthy, and if it be admitted that the malarial morbific agent, whatever it may be, results from the decomposition of animal and vegetable matters, or from exhalations from soils recently under water—then, assuredly, that period of the year when the river is most full or the area of the water at its greatest extent should (theoretically) be the least prejudicial to health. Unquestionably, when a river is low its banks are covered with an accumulation of animal and vegetable detritus. The Prah was so at the time of our stay, and was evidently in a fair condition to evolve miasmatic gases into the surrounding atmosphere, while the low-lying lands surrounding Prahsu, always under water during the wet season, were by reason of the dry one converted into black, stinking bogs, and became at once elements for the production of pestilential effluvia. As temperature increases so the water recedes. From day to day a greater surface of muddy soil becomes exposed, and more organic matter is acted upon by the sun and more poisonous gases are abundantly evolved. Many practical men with whom I have conversed upon the subject say that a trading experience of many years has taught them that more sickness occurs in the dry than in the wet season, especially if the harmattan blows intermittently and without its full strength; but all admit the relief and benefit produced by the occurrence of tornadoes. Without their occasional visits life would be unendurable on the western coast of Africa. They usually commence in April and are most violent during the months of May and June. Some are more destructive than others and do a considerable amount of damage by demolishing native buildings, uprooting large trees, and destroying the young growing plantain and banana plants. However, they give ample warning of their approach. Sky signs are never wanting, and if proper precautions are taken by the natives to stay their huts with cane lanyards much destruction of property can be prevented. Some time before the storm bursts a black ring appears above the horizon, and the whole arch of heaven, previously so blue and clear, becomes gradually enveloped in darkness; then a few drops of rain will fall and a light cooling breeze will but ruffle the foliage of the trees, causing their dry leaves to fall and fly about in every direction; then the rumble of distant thunder is heard, sounding louder and louder, and the lightning is seen, becoming brighter and brighter as the tornado approaches. Forked flashes are now incessant, with deafening thunder pealing overhead; the wind has by this time increased to hurricane violence, and the rain comes down in torrents. What makes most impression on a beholder during such a fearful war of the elements is certainly the frequent transition from pitchy darkness to broad glaring light. At one moment nothing is visible, and in another the whole expanse of nature seems suddenly illumined by the vivid lightning so as to make small objects distinctly perceptible even at a distance. A tornado is truly a grand but at the same time terrible sight. Just a month or so before the wet season ends the rains begin to ease off and the weather becomes hazy. During the middle of the day the sun shines brightly, but in the mornings and evenings the whole country is enveloped in heavy dense fogs. Throughout September these lessen appreciably day after day, and at the beginning of October the dry season once more sets in.

Although it is called the dry season it is very questionable if it is so in reality. True, the rains are over; but heavy fogs have taken their place, excessive moisture being ever present in the air, and one might wait in vain for the

[1] No. 1 was published in THE LANCET of April 4th, 1896.

FIG. 1.

A running stream of fairly good water at Biafra Edru. Over this one of the Haussas had been placed as guard to prevent the natives polluting it. The illustration shows how thoroughly the sentry recognised the importance of the duty entrusted to him!

advent of one of those bright sunny dry days we are apt to experience in more temperate climes. So loaded is the atmosphere with moisture even during December, January, and February that it is impossible to keep anything free from an investment of green mould unless it be protected by tin, or some other weatherproof substance. Tea done up in the ordinary tinfoil packets becomes caked and unfit for use after a few days' exposure to the air. Salt as soon as opened becomes liquefied, while meat lozenges in paper boxes had a sorry time of it, much to the chagrin of some officers who, relying on the possession of these luxuries and hoping to enjoy a good meal, found on opening the receptacles nothing to reward their confidence but a lump of sodden rotting animal matter at the bottom of the cases. If men took off their clothes at night and hung them quite dry over a camp chair or biscuit box, in the morning they would be found quite wet—not merely damp as our matrons would understand the term, but actually as saturated with water as if they had been rained upon. At Akusirem, that pestilential locality where I and others no doubt received the germs of malarial fever, this excessive humidity was especially noticeable.

In noticing the soil of the Guinea Coast one can well understand the difficulty experienced by an amateur geologist, attached to an expedition moving hurriedly over the country, in obtaining reliable information regarding the geological formation of the various districts through which he has so quickly passed. His field of observation is narrowed to a degree. A long, nearly straight road, bounded on both sides by a dense impenetrable bush, must necessarily offer but poor prospects to the observer, however earnest he may be in searching after truth. Commencing at Cape Coast, the rock upon which the Castle is built is granite, the outcrop rising some eight or nine feet from the sand surrounding it. The native town at its back by a gradual rise seemed built on sand and gneiss, in which some beautiful specimens of opalescent felspar could be observed. Gold (alluvial) in small grains has occasionally been washed out from the mud of the rivulets in the streets after a severe storm of rain; but no remunerative finds have as yet been unearthed at Cape Coast Castle or in its vicinity. About five miles out in a north-north-east direction there is a hill of gneiss through which veins of granite cut. At Akroful, the first rest camp, there was much sand with mica, with lime stone outcrop, and at this place, and this place only, was the water found to contain lime in anything like appreciable quantity. During our trip up to Ashantiland I repeatedly tried to obtain an indication of its presence in the water, but failed on every examination to do so.

Proceeding onwards towards Dunkwa we passed over patches of sand covered here and there with a thin layer of vegetable soil, but as the township above mentioned was approached the sand gave place to a rich chocolate-coloured loam some five or six feet deep, and banks of this rich alluvial deposit flanked the road on either side. One could readily imagine how easily crops of cocoa and spices might be grown on such a soil if anything like care and industry were exhibited in their cultivation. Indeed, cocoa, coffee, bananas, and oranges seemed to be growing wild amidst the tangled undergrowth at this spot. After quitting Dunkwa the soil appeared much the same till the bamboo swamps near Mansu were reached, when we once more came upon the sand with occasional patches of black soil—leafy mould, in fact, the result of decayed vegetation. Mansu is situated upon a slight rise, and here gneiss was once more much in evidence: micaceous slabs three or four inches across could be picked up all over the place. In the river bed there were large quartz boulders and sandstone, but although carefully searched for no gold could be found. Of mica there was an abundance, and a few nodules of water-worn magnetic ironstone were also observed. After quitting Mansu and passing through some grand bamboo swamps (vide Fig. 2) where an alluvial dark-coloured muddy deposit of some four feet in thickness rested on a gneiss bottom, we came by a gradual ascent to Baracou. Here one observed once more the rich chocolate-coloured soil, where in the native gardens, better and more carefully cultivated than heretofore, cocoa, coffee, bananas, and plantain plants were to be seen growing to great perfection. In a hollow some half mile from the native village there was a small stream the bed of which was sand and gneiss; also small blocks of quartz could be seen, but no trace of gold was visible anywhere. By a gradual descent we arrived at Prahsu, the midway resting camp betwixt Cape Coast Castle and Kumasi. The soil here was gneiss, the river coursing from east to west over a sandy bottom with large boulders of sandstone. Beyond the Prah the ground gradually rose to the next resting camp, Tobiassi, where granitic outcrops appeared with highly ferruginous sandstone and hypersthene, which has often been mistaken for granite. Shortly after leaving Tobiassi a long belt of gneiss was fallen in with till nearing Biafra Edru, another military station. Here was a fine flowing stream coursing from west to east over micaceous detritus, with large sandstone rocks nearly horizontally stratified, together with a considerable quantity of ferruginous sand. As customary, we had placed a Haussa guard to look after the non-pollution of the water by the natives. The day was warm. He placed his cap on a tree and went to sleep in the manner represented in the sketch attached (vide Fig. 1). Within a mile

FIG. 2.

This illustration represents one of the very many gigantic bamboo swamps in the neighbourhood of Mansu, through which our troops passed on their way to Kumasi: dark, boggy, mephitic spots of earth which the sun's rays have ceased to illumine for centuries past.

of this place the base of Monsi Hill was reached, where there was found a rich vegetable mould with huge blocks of granite scattered about. Near its summit there were outcrops of quartz with large quantities of disintegrated iron ore, the quartz being extensively traversed by bands of this substance, whilst nodules of magnetic iron ore, from the size of an orange to that of a pea, with smooth, worn surfaces, were observed lying about in every direction. On the northern side of the hill a similar sort of soil occurred, with the exception that quartz was more abundant and the ironstone was less in evidence as the foot of the hill was reached. Midway down the hill I camped, and a few yards off the roadway came upon a waterfall with bright, pure, drinkable water. When we reached Kwissa, situated as it is on an elevated, healthy spot, the soil formation was essentially gneiss, with extensive patches of a dark brown (not red) vegetable mould around. Here large quantities of paw-paw, banana, plantain, and chilli plants are grown, while

several cocoa plants and not a few coffee shrubs seemed to have been ruthlessly torn up by the irregular troops who had preceded us in the march. The magnificent baobab (monkey bread—Adansonia digitata) grows to perfection close by the river near this place. There were also to be seen the castor-oil and wild cotton plants. The shea butter tree abounds in the district, but no use seemed to be made of it by the natives. The tall gramineæ and cyperaceæ as well as convolvuli and leguminosæ were everywhere luxuriantly growing on the banks of the stream. There was ageneral haze over the land every morning which disappeared as the sun rose; but the humidity of the air was not nearly so great as we experienced on the other side of the Monsi Hill, and the site evidently had been well chosen for the formation of a rest camp.

On leaving Kwissa, and proceeding northward towards Kumasi, the soil was a ferruginous sand formed by the decomposition of rock with a vegetable mould. The magnificent bombax, with its enormous trunk and widespreading branches, towered aloft in the midst of cassiæ, convolvuli, and other shrubs and trees with their endless variety of tint and shade, and the forest on our flanks seemed denser and more impenetrable than ever. The increased cultivation of yams, bananas, and plantains indicated more extensive habitation than we had yet seen since leaving the Prah district. These gardens of course existed only where the thick bush had in places been cleared away. As we journeyed onward the number of streamlets increased, while the running water was found to be much purer and more usable the nearer we approached our destination in Ashantiland. Considering the climate it has been a grand piece of engineering to cut through and lay our telegraph wire along this forest from Cape Coast Castle to Kumasi, a distance of more than 150 miles, and no small amount of credit must be given to Major Sinclair, R.E., his officers and men, for performing such a masterly piece of work in so expeditious and successful a manner.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Dissection in Board Schools.

THE dissection of rabbits by girls in one of the Board schools seems destined to bring notoriety upon the school in question and upon the system in particular. Whether physiology should be taught in such schools and if a proper knowledge of it can be acquired without practical demonstrations are propositions which give rise to keen discussion. From a science standpoint it is not easy to see what harm can be done to pupils by such an innocent mode of teaching. To skin and prepare a rabbit for cooking is not considered among women to be offensive to good taste; the handling is certainly practical in this instance. Probably if this branch of domestic economy were taught in the schools the permanent benefit to the community would be greater and not call for criticism. Such is the opinion of many outsiders at the present crisis.

Hospital Saturday Fund.

The annual meeting of those interested in this movement was lately held under the presidency of the mayor. The Executive Committee report that the twenty-second collection made in 1895 amounted to £13,057 14*s.* 11*d.*, and the balance brought forward from the previous year was £439 9*s.* 6*d.* The amount of all expenses connected with the collection was 3·89 per cent. per annum. For the seventeenth year there had been an increase in the collections, a gratifying fact to record. The average length of stay of the patients in the home at Tyn-y-Coed was 16·85 days. The cost of maintenance per individual per day was 1*s.* 5·25*d.*; the total cost, including all expenses of administration and wages, was 16*s.* 7·78*d.* per visitor per week. Mr. Smedley, honorary secretary, made some stringent remarks as to the classes from which the contributions come. He said that in 1867 the working classes of Birmingham contributed £567 in all to the medical charities. In 1895 they contributed £25,000; at the same time the subscriptions of the wealthy classes were less in 1895 than in 1867, notwithstanding the increase in the wealth of the town. He pointed out that the hospital did not exist solely for the benefit of the working classes and instanced the value in training for the physicians and surgeons of the future, together with some interesting observations upon the duty of the rich in such matters.

Schools and Swimming.

A discussion upon this subject brings into prominence the value of this branch of physical training, the small percentage of those who learn, and the difficulties attending the facilities for teaching this art. The Athletic Institute has endeavoured to foster the practice by the promotion of contests and prizes. Swimming clubs, and more particularly the City Baths Committee, have been urged to afford opportunities, and now that attention is called to the subject there is a probability of its becoming more general in the elementary schools. Most people will admit the utility and importance of acquiring this knowledge, which has hitherto been sadly neglected. Out of 30,000 school boys in the town, about six in 1000 only are taught at the present time, a fact which speaks for itself.

April 6th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Mersey and Irwell Committee.

AT the meeting of this committee, held in Manchester on the 28th ult., Sir Henry Roscoe was reappointed chemical adviser for twelve months. At the same meeting a report, prepared by the chief inspector, Mr. R. A. Tatton, on the work which has been done for the prevention of river pollution in the Mersey and Irwell watershed since the joint committee was constituted in October, 1891, was received and adopted. The district overseen by the committee has a ratable value of £9,731,007 and contains a population of 2,191,319, so that the work of purifying the rivers is no light one. The inhabitants have grown up with the idea that water-courses and flowing streams were intended by nature to be used as sewers and as the receptacles of all filth and rubbish. The factories disposed of their cinders "either by tipping them direct into the rivers or by depositing them on the banks to be washed away by the first flood." This has been practically stopped, to the great improvement of the beds of the rivers and of the Ship Canal, into which they gradually found their way; for while the dredgings of the canal were formerly composed chiefly of cinders they now contain scarcely any. But few prosecutions have been required to bring about this result, remonstrances being usually sufficient. But it is added significantly, "Constant inspection of the rivers is, however, required." In May, 1892, twenty-seven works were dealing with pollutions under urban authorities, while in March, 1896, forty-seven were in operation, besides five under rural authorities. The works under construction were eight in May, 1892, against thirty in March, 1896. There is the remarkable statement that "the progress made by manufacturers had been greater, as far as results were concerned, than by local authorities," the rivers principally polluted by sewage showing less improvement than those in which manufacturing pollution formed a larger proportion. This illustrates apparently the difficulty usually found in rousing the corporate conscience, the Mersey, with a watershed population of 633,493 and only 60 manufactories, showing little improvement, whereas the Irwell, with a population of 998,625 and 272 manufactories, was decidedly purer, and many of its tributaries which used to be very foul were now in fair order. Partly for this reason and partly because some of their tributaries are polluted from manufactories in Yorkshire and Derbyshire—which means divided authority—the Cheshire rivers show less improvement than those of Lancashire. It is satisfactory to learn that the manufacturers on the whole "had met the committee in a fair spirit, although to many of them the cost of constructing works had been very considerable," and that in comparatively few cases had proceedings been necessary. And this purification is fortunately by no means all loss, for the report adds that "manufacturers who used river water had in many cases, especially on the Medlock and Irwell, already derived considerable benefit." Sir H. Roscoe reported on the sewage affluents analysed during the past month. Of these, six were good, one fair, five unsatisfactory, and two samples, one from Hyde and one from Salford, were bad. As mentioned in a previous letter, Salford has been granted to April 20th to submit an efficient

scheme of sewage filtration to the Local Government Board. The effluent sent out from the Manchester sewage works was not spoken of in a manner quite pleasing to Alderman Joseph Thompson, an important member of the Manchester city council and also of the joint committee. It is no doubt difficult, in a case of divided affections, to maintain an evenly-balanced attitude, and therefore not unnatural, perhaps, that at the last meeting of the council he should say that Sir H. Roscoe's report to the joint committee giving the result of his analyses of the effluent from the Manchester sewage works was "misleading." He explained "that as the result of experiments it would be possible to effect a large saving in the estimated cost of the sewage works and get sent out an effluent that would be entirely satisfactory." Manchester is making great efforts to put her house in order so far as drainage is concerned, but a good deal has to be done before perfection will be reached, even if Alderman Thompson's anticipations are realised. It is satisfactory to learn from Sir H. Roscoe that the condition of the water in the Ship Canal is much better than in previous years.

Steaming in Weaving Sheds.

It is a coincidence very interesting to Manchester that the three gentlemen appointed by the Home Secretary to be a committee to inquire into the working of the Cotton Cloth Factories Act, 1889—Sir Henry Roscoe, Sir Wm. Roberts, and Dr. Ransome—should have been so long and closely connected with Manchester and the district. But having been so, they are all the more fully qualified to understand the question of steaming and the introduction of artificial moisture in cotton weaving sheds, and, if found desirable, to suggest amendments in the law.

Report of the Chief Constable.

The report on the work of the Manchester police during the past year is full of interesting if not very agreeable information, and it gives a picture of some phases of life in the city not roseate in hue; but the chairman of the Watch Committee at the last meeting of the City Council considered the report, on the whole, satisfactory. To some extent it is so, as there has been a decrease in several classes of offences. For instance, 217 fewer indictable offences were reported to the police, while 4607 fewer persons were proceeded against for non-indictable offences. The total number arrested during the year was 13,534, and of these 4550 males and 2487 females were drunk when taken into custody. For being drunk and "disorderly" in the streets 5608 persons were arrested and 256 summoned, being a decrease on the previous year of 1124. There is a great difference in the numbers arrested on the different days of the week, Saturday still standing out pre-eminently as the day specially and most conveniently devoted by a large section of the "British working man" class to the business and pleasure of drinking, for among the 5608 arrested 1766 are placed to its credit, while Sunday drops far behind with 804. The numbers then fall to Wednesday, rising a little to Friday, which has, however, only about a third of Saturday's number. There has been a decrease of 1033 on the number arrested for the same cause last year, which is encouraging so far as it goes—which is not very far. Of the chronic drunkards 5 had been in custody respectively 174, 131, 105, 101, and 97 times, so that their recurrent appearances before the court must be an almost continuous grim sort of comedy. For the accommodation of these people and sundry Manchester can boast of 517 public-houses and 2500 "beer and wine houses"—a number more than called for by the reasonable requirements of the people. Happily, they are not likely to be multiplied without careful consideration, and at the Brewster Sessions last August fifteen licences were refused. During the year 608 "juvenile offenders" were arrested—509 boys and 99 girls. Of this number 52 boys and 27 girls were little ones under ten years of age, most of them no doubt following their parents in the pathway of drink and crime. There are 256 registered common lodging houses in Manchester, which are constantly visited by officers appointed for the purpose to see that the regulations of the Common Lodging Houses Act are fully carried out. In addition to their functions in relation to crime the police have others which are almost as valuable to the community. They are of the greatest possible help to the sanitary department of the corporation and act as very efficient sanitary inspectors. In addition to securing some thousands of lost or ownerless dogs, most of which were consigned to a painless death, the police restored 3657 lost children to their homes last year, and they distributed 8047 bottles of medicine to poor people. This last may be thought a questionable proceeding, but presumably it was a simple diarrhœa mixture warranted not to kill.

Opening of the Failsworth Sewage Works.

An important addition to the means for the purification of the sewage of the district has just been made at Failsworth, an outlying suburb of Manchester, where new sewage works were opened on Thursday last. The chairman of the sewage committee of the district council spoke in glowing language and said: "Practical experiments had conclusively proved that the system which they were adopting was the very embodiment of sanitary science and experience brought down to modern times, producing as an effluent water which certainly appeared fit to drink." This looks as if he were too cautious to test it so far. A dinner in the evening at the Belle Vue Gardens followed the inspection of the precipitation tanks and filter beds, which were seen in operation. The cost of the scheme, including land, sewering, and everything complete, was £34,800. The cost of the outfall works was about £8700.

The Chorlton Workhouse Dietary.

Some time ago the Chorlton board of guardians, of which Dr. Rhodes is the chairman, decided to make some improvements in the diet and clothing of the inmates of the workhouse. It was foretold that this would lead to an increased cost of 7*d.* per week per head, but there has been instead a slight decrease. Between Michaelmas 1894 and 1895 "the average weekly cost per head of the in-door poor for provisions, medicine, necessaries, and clothing was 4*s.* 1½*d.*, whereas for 1895 it was only 3*s.* 11¾*d.*, or an actual reduction of 1¼*d.* per head per week as compared with 1894, when the improved dietary was not in force." There seems to be some doubt of the Local Government Board allowing this improved dietary to be continued, as it interferes with uniformity. In commenting on these matters the chairman said that as to the improved dietary and clothing the return showed that "humanity was sometimes the best policy as well as honesty," and that the reduction of 1¼*d.* a head in the weekly cost of maintenance meant a saving of £800 a year. He hoped the ratepayers would remember that, if the Local Government Board persisted in the refusal to sanction the dietary.

Lady Poor-law Guardians.

In the Chorlton Union there are now six ladies on the board, one having been returned the other day for the Chorlton township. She has long taken an intelligent interest in sanitary matters and will be a very useful member of the board. In the Broughton township of the Salford Union, where there were eight candidates, a lady headed the poll with a considerable majority. In one matter the presence of ladies will prove to be economical, for in general they have exercised a moderating influence over the tendencies of male guardians to become members of costly deputations.

April 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Glasgow.

THE list of those who are to receive the honorary degree of LL.D. at the graduation ceremony on the 14th inst. includes the names of Dr. Thomas Reid, Lecturer on Ophthalmology in the University; Mr. W. Thistleton Dyer, F.R.S., director of the Royal Botanic Gardens, Kew; and Mr. Jno. Ure, a former Lord Provost of Glasgow and the first chairman of the Public Health Committee, in which capacity he did important work in organising the sanitary system of the city. At the meeting of the general council on the 1st inst. the ordinances recently issued by the Universities Commission were discussed, and it was resolved to petition Parliament against the ordinance dealing with the power of the University Court to readjust the conditions upon which any chair was held at the occurrence of a vacancy; the council was of the opinion that the powers of the Court in this direction ought to be increased. Attention was also drawn to the fact that under the present circumstances the women students in Queen Margaret College were placed at a disadvantage as compared with the male students of the University, in consequence of the lecturers in Queen Margaret College not taking part in the degree examinations. The

matter was referred to a committee to report to the next meeting of the council.

Presentations to Medical Men.

Dr. Cluckie, Greenock, upon his retiring from the town council, has been presented by the members of the council with a handsome silver tea-service in recognition of his public services. Dr. Cluckie has been a town councillor and bailie for several years. He is surgeon to the Greenock Eye Infirmary.—The ambulance class of the Govan police have presented Dr. Barras with a microscope as an acknowledgment of the assistance he has rendered to the class as their instructor.

Barony Parish Council, Glasgow.

The report of Dr. Fraser, the Commissioner in Lunacy, who visited the asylum on Feb. 2nd and 3rd, shows that the admission-rate continues to be high, being an average of 32 patients per month. The ratio of recoveries is very satisfactory, having been since the last report 40·3 per cent. and 47·9 per cent. of the men and women respectively admitted. The medical and general care of the patients and the management and order of the institution are noticed as worthy of commendation. A somewhat heated discussion took place at the last meeting of the council upon a proposal to give a donation to the St. Elizabeth Nursing Home, which is under Roman Catholic management. It has been the custom of the council to give a grant to the Glasgow Sick Poor Nursing Association, and it was stated at the meeting that this association refused to employ Roman Catholic nurses, and that therefore the St. Elizabeth Home should also be assisted. It is a matter for regret that a sectarian dispute should arise in connexion with the humane work of giving nursing assistance to the sick poor, but the responsibility may fairly be placed on those who adopt a purely charitable designation but in practice exclude nurses who belong to a particular religious communion.

Galashiels Cottage Hospital.

At the annual meeting on the 31st ult. it was reported that seventy-one patients had been under treatment during the year. The financial statement showed a deficit of £60.

Natural History Society of Glasgow.

At the meeting of this society on the 2nd inst. Dr. Robert Brown, Pollokshields, showed a large number of interesting plants which he had collected in Switzerland. On the same occasion, too, a number of mosses from Simla, collected by Surgeon-Major Shearer, were exhibited.

Glasgow Police Force Medical Officer.

The sub-committee appointed to consider the applications for this appointment having made a short leet sent the following names—viz., Dr. Jno. A. Boyd, Dr. Cumming Grant, and Dr. C. W. Stewart—to the committee. After a vote had been taken—the majority being in favour of Dr. Boyd—it was decided to recommend his name to the council, and he has accordingly been elected. The appointment is worth £350 a year, with an allowance of £50 for travelling expenses.

Aberdeen University Court.

At the last meeting the court appointed Mr. James Hendrick, Lecturer in Agricultural Chemistry in the Glasgow and West of Scotland Technical College, to the new Lectureship on Agricultural Chemistry. Regulations for the Students' Union were approved, and the sale of alcoholic liquors within the University buildings will, under the new rules, be prohibited on all occasions, including dinners or suppers. A legacy of £1000 from the estate of the late Mr. James Jamieson, of Prospect-hill, merchant in Aberdeen, has now become payable, the bequest having been made for the purpose of establishing a lectureship, or towards the endowment of a chair, in the Faculty of Law in the University, as may be determined by the court. It may be mentioned that prominent members of the Students' Union are dissatisfied as to the regulation regarding liquors and as to another rule fixing the opening hour of the billiard-room at 1 P.M. and the closing hour at 10 P.M.

Graduation Ceremony, Aberdeen University.

The graduation ceremony in all the Faculties took place on Saturday for the first time in the Mitchell Hall, Marischal College, in presence of a crowded audience.

Bequests to Aberdeen Hospitals.

Through the death of a life-rentrix the following among other Aberdeen institutions benefit from the estate alluded to above: the Royal Infirmary, £500; the Hospital for Incurables, £250; the Deaf and Dumb Institution, £250; and the Hospital for Sick Children, £250.

Outbreak of Small-pox at Alford, Aberdeenshire.

Towards the end of last week it was found that four cases of small-pox had occurred at Alford, a village about thirty miles from the city of Aberdeen. The county medical officer, Dr. Watt, at once took every precaution to prevent the spread of the disease.

Aboyne Ambulance Class.

On the 2nd inst. in Aboyne (Aberdeenshire) Public Hall the Marchioness of Huntly presented the medals and certificates to the members of the ambulance class which had been conducted by Dr. D. D. Mackintosh. Lord Huntly and Sir W. C. Brooks of Glen Tana both spoke on the importance of ambulance work, and the lecturer was thereafter presented with a handsome dining-room clock.

Outbreak of Small-pox at Alford, Aberdeenshire.

The epidemic has spread from Alford into the Cluny district, where up to Sunday night five cases were reported. Under the directions of the county medical officer energetic action is being taken in the direction of revaccination. The origin of the outbreak has been traced to a child brought by the parents to Alford from South Shields on Feb. 12th.

Dr. W. Findlay of Aberdeen has been appointed by the town council of that city as medical attendant of the employés of the cleansing and lighting departments.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The "Moy-Mell" Entertainment for the Children's Hospital.

THE entertainment in aid of the Children's Hospital, Temple-street, Dublin, will take place on the 7th inst., being Easter Tuesday. The whole of the Rotunda has been engaged and no less a sum than £500 spent on the decorations for the occasion. The *fête* will doubtless be a very great success, for it is under very distinguished and popular patronage, while the city happens to be at present crowded with visitors brought by the excursion trains from all parts of Ireland.

The Athlone Union Hospital.

The guardians of this union were, it will be remembered, dismissed last year by a sealed order of the Local Government Board on account of their refusal to appoint a trained night nurse in the infirmary. The last meeting of the vice-guardians took place on Saturday, the 4th inst., when their turn as managers of the union came to an end. Many improvements have been made and the rates collected in such a satisfactory manner that there is at present a balance of £5251 in favour of the board.

Health of Belfast.

At the meeting of the city council, held on April 1st, the medical superintendent officer of health reported that the health of the city seems gradually improving and contrasts very favourably with that of the corresponding period of last year, more especially in the deaths from diseases of the respiratory organs, which, owing to influenza, were then numerous. Some cases of that disease have occurred latterly, but not sufficient in number or severity to materially affect the death-rate. The epidemic of scarlet fever which seemed to have passed away has returned, and the cases are again numerous though the mortality is light. Measles, which has been prevalent for some months past in the Ballymacarrett district, has now spread to the open parts of the city. The deaths from measles and typhoid fever are few as yet; the death-rate was 25·7 from all causes. At an inquest on April 4th the coroner, in referring to the death-rate of Belfast, said it was the highest in Great Britain with the exception of Galway. In regard to infants he said it was an extraordinary fact that of every 100 persons dying in Belfast every week or month, as the case might be, 25 of them were children under one year of age. One of the main reasons for this was the fact that the parents would not take the trouble of bringing in a medical man, although they could get the services of a medical man in all quarters free of charge.

The Belfast Water-supply.

At the present time the total storage in all the reservoirs is some 2,440,492,109 gallons, the largest store of water ever before available, and is upwards of 265 days' supply for the city of Belfast. This very favourable state of affairs is largely due to the careful working of the waste-water meter system, which has been the means of detecting and controlling the underground and other wastes of water within the commissioners' area of supply. The water-supply has been much increased by the very wet weather of March, during which there were only five days on which rain did not fall, and in which the number of inches of rain was 4·99, while the average is only 2·86. There was literally no March dust during the past month.

The Ulster Medical Society: Antitoxin in Diphtheria.

At the usual monthly meeting, held on April 2nd, Dr. Wadsworth gave an interesting *résumé* of a series of cases of diphtheria treated by him successfully with antitoxin. A prolonged discussion followed in which a large number of the members took part, the entire evening being devoted to the consideration of some of the many questions connected with diphtheria.

Election of Direct Representative for Ireland on the General Medical Council.

As the contest for the position of direct representative on the General Medical Council may be fought out again next November between the provincials and the metropolitans, the following statistics, procured from the files of THE LANCET, may prove interesting:—

Year.	Total metropolitan vote.	Total provincial vote.
1886	1642	398
1891	872	516
1896	1321	757

The metropolitan vote has, in fact, fallen off considerably, whilst the provincial vote has been steadily increasing, being at the recent election double what it was in 1886. In 1896 the successful metropolitan candidate beat the provincial by 109 votes.

The Application of the Sixty-five Rule to Queen's College Professors.

Many have been the attempts of the Treasury to convert the Queen's Colleges into mere civil service departments. At first it was intimated that all professors possessed of an income of over £300 a year should retire on attaining the age of sixty-five, or at furthest at seventy. The professors, regarding this as an encroachment on their rights, pointed to the charter of the College and to the fact that the majority of them were appointed "at the will and pleasure of the Queen," which has been always interpreted as meaning for life. A commission was then appointed, with the result that the commissioners recommended that all the professors should be brought under the provisions of the sixty-five rule. If that recommendation were adopted a cruel injustice would be done to the medical profession engaged in private practice, as, no matter how efficient, they would be liable to be turned adrift on attaining the age limit without even the solatium of a pension. Again the College authorities remonstrated. They pointed out that the statutes could not be altered for the purpose except by Act of Parliament, and urged many reasons against the policy of adopting such a course. In the interests of higher education, and especially in the interests of the Cork School of Medicine generally, I am glad to be in a position to state that I have learned on what I consider thoroughly reliable authority that the Lord-Lieutenant, having considered the whole question carefully, has decided that it is not desirable to apply the sixty-five rule, at least in its entirety, to the Queen's College presidents and professors.

National Registration of Plumbers.

The Lord Mayor of Belfast at a public meeting recently held said it seemed to him that the Worshipful Company of Plumbers was serving the best interests of the trade and at the same time protecting the public from imposition by its excellent system of registration. He considered that the system was of the greatest possible benefit to both master and journeymen and was glad to see it become so popular in Belfast.

April 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Uræmic Aphasia.

IT has hitherto been maintained that cerebral manifestations of uræmic poisoning were of a general character, proofs of the limitation of the activity of the toxines to a particular area of the brain being wanting. Dr. Rendu, physician of the Hôpital Necker, had, however, a case recently in his wards that invalidates this contention.[1] A man aged fifty-six was seized suddenly with an apoplectiform attack. When seen on the morrow by Dr. Rendu the man had regained consciousness, but three symptoms remained—viz., aphasia, right brachial monoplegia, and a systolic bruit at the base. The diagnosis of embolus was made. A few days later, however, the patient was seized with intense dyspnœa, lapsing quickly into Cheyne-Stokes respiration; the urine was scanty and albuminous. Phlebotomy was immediately practised, the analysis of the blood revealing the presence of seventy-five centigrammes of urea per litre. It was evidently a case of uræmia. The blood-letting determined an improvement in the condition, the dyspnœa disappeared, and the somnolence gradually diminished, whilst the vocabulary became more extensive. A month later no trace of either aphasia or monoplegia remained. MM. Ménétrier and Guyot stated that similar instances of uræmic aphasia had come under their notice, but that Dr. Rendu's case was peculiar in that paralysis was superadded.

The Sero-therapic Treatment of Acute Alcoholism.

This is the age of experiment, especially in the matter of humoral therapeutics. Had M. Toulouse's communication relative to the above heading not been presented to the grave and scientific Société de Biologie (March 28th) I should hardly have ventured to report it in the columns of THE LANCET. Thinking that poisoning with large doses of alcohol has perhaps the effect of rousing the organism and thus creating a barrier of self-defence by inducing the secretion of products capable of nullifying the action of the alcohol, M. Toulouse administered to two dogs for one week a daily dose of 40 grammes of ethylic alcohol. The serum of those animals was then injected in the course of one day in three separate doses of 8 c.c. into the subcutaneous tissues of a patient suffering from acute alcoholic delirium. The next day the fever is said to have disappeared and lucidity to have returned. M. Toulouse states that he is engaged in further researches calculated to throw light on the specific or non-specific properties of the serum employed. Should the method prove really useful we must expect to see in the near future a British Dogs' Total Abstinence Society in full working order, for faddists will not fail to urge the wickedness of corrupting the morals of the canine race in order to save a mere man from the consequences of his own debased habits.

A Sign of the Times.

I informed your readers in a recent number of the regulations controlling the admission into France of cattle, all of which, excepting such as are intended to be slaughtered within a week, have to be submitted at the frontier to the tuberculin test. That the public is fully alive to the danger of absorbing milk derived from a tuberculous cow is proved by the exhibition in the window of a milk-vendor living in the Rue St. Honoré of a card bearing the following notice:—"*Toutes nos vaches ont subi l'épreuve du vaccin de la tuberculose.*" This is up-to-dateness with a vengeance.

Landry's Paralysis from Streptococcic Infection.

Two cases of Landry's paralysis following influenza having been recently reported in THE LANCET,[2] it may be of interest to record an instance of the same disease due to microbic infection. M. Remlingen[3] reports the case, the patient being a non-commissioned officer who, having contracted malaria in Madagascar, was suddenly seized with paraplegia with subsequent evolution of typical Landry's disease. Death ensued on the eleventh day with bulbar symptoms. The necropsy revealed only slight congestion of the anterior cornua. Cultures made from nerve tissue collected at various points in the cord yielded the streptococcus in a state of purity, the microbe being especially abundant in the cervical

[1] Association Médicale des Hôpitaux, March 27th, 1896.
[2] THE LANCET, Feb. 29th and April 4th, 1896.
[3] Société de Biologie, March 28th, 1896.

region. Inoculation into the rabbit gave a negative result. Sections of the cord treated according to Nissl's method showed the presence of streptococci in the cervical region; they were only found between the large cells of the anterior horns. These cells presented in several places a rupture of their prolongations—a lesion already pointed out in Landry's disease by MM. Marinesco, Ballet, and Dutil. The vessels of the anterior fissure and their ramifications into the anterior horns were in a state of inflammation, and they contained an undue number of white corpuscles. No hæmatozoaires were seen. The streptococcic origin of this case of acute ascending paralysis would thus appear to be distinctly proved, malaria having only had the effect of lessening the resistance of the system to the inroads of the germ.

April 7th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Berlin Psychiatrical Society.

THE ordinary quarterly meeting of the Berlin Psychiatrical Society took place on March 22nd, Professor H. Laehr, President, being in the chair. Dr. Neisser (Leubus) read a paper on Secondary Mental Weakness in Paranoia, arguing that mental weakness is not necessarily a symptom of paranoia, a view which is in opposition to that held by Professor Hitzig and others. The paper was discussed by Dr. Jastrowitz, Professor Moeli, Dr. Koeppen, and Dr. Falkenberg, and Dr. Neisser briefly replied.

The Emperor and Empress Frederick Hospital for Sick Children.

At the fifth annual meeting of the trustees and supporters of this hospital, held on March 22nd, Professor Virchow, who was in the chair, said that there had been 11,480 patients during last year; 8831 new cases were treated in the out-patient department, and 2049 in-patients were admitted, showing increases of 1711 and 300 respectively as compared with the previous year. The death-rate was lower by 26 per cent. than the corresponding one of the previous twelve months, and there is no doubt as to this good result being chiefly brought about by the efficacious antitoxin treatment of diphtheria. On the other hand, the treatment of scarlet fever with Dr. Marmoreck's anti-streptococcic serum has been rather discouraging, 25 per cent. of the cases proving fatal. The wards of the infirmary have been so crowded of late as to necessitate the building of an additional pavilion. The income from all sources during the year was 158,492 marks, and the total expenditure was 158,149 marks.

Congress of the South German Laryngologists.

The Third Congress of the South German Laryngologists will be held on Whit-Monday, May 25th, at Heidelberg.

A Female Assistant Medical Officer to a Lunatic Asylum.

Miss Sieglinde Stier, M.D., has been appointed assistant medical officer at Dr. Leehr's private asylum at Zehlendorf, near Berlin. Miss Stier has hitherto held the office of assistant medical officer to the infirmary at Dessau.

Professor Virchow.

At the last meeting of the Berlin Medical Society Professor Virchow was unanimously elected representative of the society at the twenty-fifth annual Congress of the German Surgical Society.

April 6th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Wounded at Naples.

THE Neapolitan Ospedale della Trinità now accommodates 111 of the wounded brought from the field of Abba Carima and landed at Naples from the *Sumatra*. The gratitude of the poor fellows at finding themselves in comfortable beds and properly cared for may be understood when many of them declare that for three months from their departure for the seat of war till their return the other day fresh, pure water had not touched their skins. The medical staff have many difficulties to overcome, aggravated by the conditions under which the wounded were transported from Massowah and by the importunities of relatives, friends, and the outside world generally to see the patients and hear what they have to tell. Owing to the system of communication which has kept Italy in the dark as to the fate of her sons in Abyssinia, the Neapolitan and other hospitals are literally besieged by fathers, mothers, sisters, and brothers clamorous for news of their near and dear ones. Up to the point at which the admission of these outsiders would prejudice treatment and recovery the medical staff have thrown no unnecessary obstacles in the way of interviews between the wounded and their relatives, and the scenes of which they have been witnesses are described to me as touching in the extreme. One detail the soldiers under treatment are unanimous upon and it is this—the savage cruelty of their antagonists. An Italian officer "crivellato di palle" (riddled with bullets) was breathing his last on the ground when eight Shoans pounced on him and disembowelled him with their spears! Another point on which equal unanimity prevails is the heroism of the army medical staff. Out of twenty surgeons on the battlefield of Abba Carima seventeen were killed in action. Take, for example, Dr. Giuseppe Lombi, who, surprised before he could regain his ambulance, had to fight like a combatant and join in a charge against the advancing hordes. He was among the foremost of the company, who were making head against their assailants when he was wounded in the throat just at the moment he was shouting "Viva l'Italia!" He refused all succour from the soldiers who wanted to carry him out of action and died soon after with his country's name on his lips. Experiences and anecdotes similar to the above are related by the sick and wounded, 227 in number, just landed from the *Bormida*. The Shoan atrocities perpetrated on the fallen are confirmed. As in the case of those disembarked from the *Sumatra*, the wounded brought by the *Bormida* are unanimous in praise of General Arimondi, to whose brigade nearly all belonged. His coolness and courage, they say, would have given the battle a quite different result had he been in command. No authentic news of him is as yet forthcoming, but his soldiers absolutely exclude the report that he died by his own hand.

Death of Professor Mariano Semmola.

As I send off this letter I receive the announcement of the death of one of Italy's most illustrious physicians, a consultant, indeed, of European reputation, whose contributions to THE LANCET are fresh in the recollection of your readers. Dr. Mariano Semmola, Professor of Clinical Medicine in the Neapolitan School, died yesterday of cerebral apoplexy. Next week I shall give some account of his life and work.

April 6th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Hospital for Inebriates at Washington.

A BILL has passed Congress to establish and maintain a hospital for the treatment and cure of persons suffering from the habitual excessive use of alcoholic liquors, opium, and cocaine. The hospital will have the care of persons of the following classes to the extent of its capacity to receive and treat them:—Firstly, such persons as may be committed to the said hospital by the police court or criminal court of the district; and the judges of the said courts shall have power to commit to the said hospital for a period not to exceed ninety days any person who may be convicted of the habitual excessive use of alcoholic liquors who might otherwise be amenable to commitment to the workhouse, and any person so committed may be at any time discharged from such hospital upon proof that he has been cured, and the certificate of the medical superintendent of the said hospital may be accepted as evidence in such proceedings; secondly, such persons as may be recommended for treatment in the said hospital by the commissioners of the district of Columbia.

Bovine Tuberculosis.

The New York State Board represents that a somewhat careful calculation shows that to destroy all the cattle affected with this disease in the State to-day would involve an expenditure of nearly 1,000,000 dollars. Should the eradication of the disease from all herds be once accomplished such rules and regulations as the board is competent

to make and enforce would prevent any importation of infected animals from other States and thus permanently protect the people from this great menace to the public health. The great importance of this work may be fully realised when it is stated that of the deaths occurring in this State during the year over 10 per cent. of the entire number from all causes were from pulmonary tuberculosis.

Against Indiscriminate Spitting.

The New York Board of Health has adopted resolutions framed by Dr. Prudden and Dr. Biggs, bacteriologists, regulating expectoration in public conveyances and in public buildings. The new law requires that notices be posted in all public places warning persons against expectorating on the floors. Municipal authorities and surface and elevated railway companies will be required to provide proper receptacles for expectoration and they must be kept thoroughly clean. The resolutions prohibit the common use of knives, forks, and spoons on free-lunch counters in saloons and also the use of roller towels in the lavatories of saloons and restaurants and other public places. Towels in common use at saloon bars are also prohibited.

Tenement House Reform.

The Tenement House Commission has presented to the Legislature a Bill giving the city of New York power to condemn all rear tenements and convert their sites, together with the unoccupied area in front and rear, into courts bounded on all sides by the rear walls only of the existing front buildings. The city is to be authorised to expend 5,000,000 dollars a year in land damages and expenses until the improvement is completed, and the title to the property is to be taken by the city.

Classification of Diseases.

The Surgeon-General believes the classification of diseases and injuries based on that of the Royal College of Physicians of London to be inconsistent in many respects with our present knowledge of the causation and processes of disease. He has therefore constructed a new system in which the causes of disability are aggregated into five principal classes: (1) infectious diseases, general and local; (2) diseases of nutrition, general; (3) structural and functional diseases of organs; (4) accidents and injuries; and (5) unclassified. Many of the diseases now classed as diseases of particular organs are placed among the infectious diseases, such as tonsillitis, pericarditis, and endocarditis. Of the diarrhœal diseases of the old list acute dysentery has been placed among the infectious.

Health of the Army.

The mean strength of the Army of the United States during the year 1895, according to its medical reports, was: Whites, 22,904; Negroes, 2086; Indians, 386; total, 25,376. The admission-rate of the negro troops was considerably less than that of the white soldiers—811·60 as compared with 1116·44 per 1000; and this lower rate was due to a relative freedom from disease, for their admission-rate for injury was as high as that of the white troops. Their number constantly sick was 25·93 per 1000, while the corresponding rate among the whites was 35·18; and the average numbers of days lost by each on account of sickness or injury were, respectively, 9·5 and 12·8. The rate for discharges also was lower among the negroes—9·40 as compared with 13·56 among the white troops. There was little difference in the death-rates of the two races.

Treatment of Drunkenness in the Army.

Surgeon Arthur has reduced the statistics of alcoholism at Vancouver Barracks by treating drunkenness as acute poisoning. He states that the number of cases of simple acute alcoholism that appeared at sick call and during the day when he first assumed charge of the hospital was unusually large and resulted in the laying down of certain rules as an effort to discourage drunkenness as far as it was in his power. No man is taken on the sick report or excused from any duty unless his condition would make it actually dangerous for him to keep at work. A man reported at the hospital in any stage of alcoholism is treated as a case of alcoholic poisoning, taken immediately to the operating room, and his stomach emptied by the use of the stomach pump and thoroughly washed out with a warm 2 per cent. soda solution. After this he is given a bowl of hot beef extract with cayenne pepper and allowed an hour's rest, when he is generally able, however unwilling, to do his duty. If the weather is severe, either hot or cold, it might not be safe in his depressed condition to force a man to work out-of-doors immediately after this procedure, but at that post the extremes are not great and it has in no case resulted prejudicially to the patient. The effect of this treatment has been uniformly excellent. The stomach, emptied of its irritating contents and cleansed of the thick tenacious mucus that is always present in such cases, is much less irritable and rarely rejects the beef extract which is given immediately. The nervous symptoms improve at once, and sedatives administered by the mouth have a far more lasting effect, and in almost all cases the craving for liquor is diminished. In the past ten months only one case has been admitted.

New York, March 28th.

Obituary.

ROBERT MAIN HORNE, M.D. EDIN.

THE death on the 31st ult. of Dr. R. M. Horne, Senior Demonstrator of Physiology in the Owens College, Manchester, has come as a severe blow to his friends. Unwell for nearly a month, a loyal devotion to duty prevented him from taking much-needed rest till a week before his death, when he was found to be suffering from pleurisy. He appeared to be progressing towards convalescence till the morning of the 31st ult., when grave symptoms suddenly supervened and a fatal termination rapidly ensued. Born twenty-seven years ago, after finishing his education at the Stirling High School he entered the University of Edinburgh in 1886, where he showed himself pre-eminent amongst the men of his own year. During his curriculum he gained the Grierson Bursary on three occasions, the Vans Dunlop Scholarship for students of the third year, and medals or prizes in nearly all his classes; whilst, on graduating with first-class honours in 1890, he was awarded the Freeland Barbour Fellowship in Anatomy, Physiology, and Pathology. After graduation he acted as resident surgeon in the Royal Infirmary, and the following year went to Strassburg, where he engaged in original research on the thyroid gland, his results, embodied as a thesis, being awarded by the authorities of his *alma mater* the Gunning Victoria Jubilee Prize in Medicine in 1893. Shortly afterwards he was appointed Junior Demonstrator of Physiology in the Owens College, and more recently became Senior Demonstrator. In 1895 he graduated M.D. with honours, the subject of his thesis being "Muscle Plasma and its Coagulation." His "leaf has perished in the green," when only time and health seemed requisite for the fulfilment of those brilliant possibilities which had been forecast by his academic career. Cheerful in disposition, modest and unassuming, thoughtful and self-sacrificing in the interests of others, as well as warm-hearted and constant in his friendships, his early death will be a lasting loss to those who had the privilege of intimate friendship with him; whilst the profession will be much the poorer for the premature removal of a member endowed with such unusual ability and zeal.

WILLIAM WILSON, M.D. GOTT., F.R.C.P. LOND.

ENGLISH-SPEAKING practitioners in Italy have lost their Dean in this able and accomplished physician and surgeon, who closed an honourable and successful career at Florence on Wednesday, April 1st.

A student at Guy's and St. Thomas's, young Wilson impressed all his teachers by his devotion to work, and in the clinical departments especially by his skill in diagnosis and his judgment in therapeutics. He took the diploma of the Royal College of Surgeons in 1838 and the same year graduated as Doctor in Medicine in the University of Göttingen, where he attracted the favourable notice of the illustrious Langenbeck. In 1844 he became a Member of the Royal College of Physicians, and enhanced his professional, particularly his clinical, proficiency by frequent and prolonged visits to the chief French and Austrian schools. Early in his career he served on the *Dreadnought* under Mr. George Busk, whose high opinion of his abilities and character as a surgeon confirmed the estimate formed of him at Guy's by Mr. Edward Cock. In medicine proper he distinguished himself as one of the physicians attached to the Royal Free Hospital, on leaving which institution to enter on practice

abroad he received the most gratifying attestation of the esteem in which he was held by colleagues like Dr. Thomas B. Peacock and Mr. John Gay.

Having some fifty years ago become physician of Legation at Florence he rapidly rose to be the leading consultant in the English-speaking community there, while he was frequently called in consultation by professional colleagues, Italians and British, in other centres of the peninsula, notably Venice and Rome. Some years ago he delegated the chief portion of his practice to his son, Dr. Charles Blair Wilson, and, indeed, had almost retired from active duty when death struck down that exemplary young physician in the touchingly dramatic circumstances recorded in THE LANCET of Dec. 29th, 1894. From this cruel blow Dr. Wilson never entirely recovered, but, true to the medical enthusiasm which made him to the end a constant attendant at the clinique of the S. Maria Nuova, he once more entered into harness as the best solace open to him. The effort, however, was of brief duration, and, though always welcomed by his old *clientèle* and his younger colleagues, the burden of eighty winters, aggravated by the heaviest loss that could have befallen him, soon made itself felt. About a fortnight ago he was attacked with what turned out to be severe appendicitis and perityphlitis, and after a prolonged struggle in which he was ably supported by colleagues—Italian and British—he succumbed on the evening of Wednesday, April 1st, and on the following Friday was interred in presence of many mourners in the Protestant cemetery.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the Second Examination of the Board in the subjects indicated on Monday, March 30th:—

Anatomy and Physiology.—Thomas Walsh Tetley, Yorkshire College, Leeds; Thomas Higson, Owens College, Manchester; Hubert Harry Hollick, Alfred Ernest Frecar Wilkes, Herbert John Orford, Joseph Frederick Harvey, Lionel Edward Orton, Horace Wilberforce Freer, and James Arthur Lilwall Peirce, Mason College, Birmingham; Joseph Reginald Frost and Hugh Mortimer Thomas, University College, Bristol; John Gatzkell Churton and Adam Pearson Hope-Simpson, University College, Liverpool; Peter Herbert Scholberg, Cambridge University; and Cecil Westland Pilcher, Oxford University.

Anatomy only.—Edwin Garrett Bunbury, University College, Bristol; William Stanley Boothman, Owens College, Manchester; Frank Ryalls Eddison, St. Bartholomew's Hospital; and Arthur Bradshaw Passmore, Durham University and Guy's Hospital.

Physiology only.—Ralph Holt, Royal College of Surgeons in Ireland and Mr. Cooke's School of Anatomy and Physiology; Frank Cooper, Mason College, Birmingham; Stanislaus Marcus Dowling, Catholic University, Dublin; John Harris, Sydney and Durham Universities; Percy Bertram Spurgin, St. Mary's Hospital; and Charles Thomas McClure, London Hospital.

Eighteen gentlemen were referred in both subjects, three in anatomy only, and two in physiology only.

Tuesday, March 31st:—

Anatomy and Physiology.—Bertram Wilmore Moss, Herbert Midgley Reeve, Walter Baynard Hope, Ernest Thomas Jensen, and Arthur George Grant Plumley, Guy's Hospital; Harold St. Clair Elliott, Cambridge University; Henry Chadwick Woodcock, St. Mary's Hospital; George Padgett Tayler, Lewis Augustus Walker, and John Moore Collyns, St. Bartholomew's Hospital; Christopher John Mayhew and Cuthbert Allen Sprawson, King's College, London; John Bernard Davey and Alexander John Knowlton, Middlesex Hospital; Hackworth Stuart, University College; Alexander George Henry Anthonisz, University College, London, and Mr. Cooke's School of Anatomy and Physiology; Julian Taplin, Mason College, Birmingham; Alexander Tateosian Abadjian, London Hospital; and John Francis Cunningham, St. Thomas's Hospital.

Anatomy only.—Victor Samuel Alexander Bell, Cambridge University and St. Bartholomew's Hospital; John Stansfield Gayner, St. Bartholomew's Hospital; and Edmund Clapperton Dean, University College, London.

Fourteen gentlemen were referred in both subjects and three in physiology only.

Wednesday, April 1st:—

Anatomy and Physiology.—Thomas Hall Gandy, Sydney Richard Scott, Hugh William Leonard, and Ralph Harry Vincent, St. Bartholomew's Hospital; Arthur Thompson, Cambridge University and St. Bartholomew's Hospital; William Day French, University College, London, and Mr. Cooke's School of Anatomy and Physiology; Sydney James Evans, Guy's Hospital; Walter James Waters, Percy Lake Hope, and Basil Fawsett, St. Thomas's Hospital; William Layard Griffiths, and William Herbert Davis, University College, London; Arthur George Eldred, London Hospital; Frederick Fenn Elwes, Middlesex Hospital; and William Henry Passmore, Charing-cross Hospital.

Physiology.—Bernard Newmarch Molineux, St. Thomas's Hospital.

Twenty gentlemen were referred in both subjects and one in Anatomy only.

Thursday, April 2nd:—

Anatomy and Physiology.—Alfred Dittlof Benedictus Von Rosen and George Darell Maynard, St. Mary's Hospital; John Newton Dyson, Donald John Munro, Thomas Malcolm Walker, Everard Inseal Davis, Alfred Gelsthorpe Osborn, Arthur Ronald McLochlan, Russell Henry Jocelyn Swan, Joseph Taaffe De Coteau, and Frederick Ernest Hutchinson, Guy's Hospital; Hanway Richard Beale, Yoshihiro Takaki, and Arthur Webb Jones, St. Thomas's Hospital; John Michael Abraham Olivey, Cambridge University and St. Thomas's Hospital; Ernest Lewis Lilley, Charing-cross Hospital; Francis Henry Foulds, St. Mungo's College, Glasgow, and Charing-cross Hospital; Cecil Scarlett Frost, St. Bartholomew's Hospital; Walter Robert Dunstan and Alfred Orme, London Hospital; Timothy Howell Davies, Middlesex Hospital and Cooke's School of Anatomy and Physiology; William Alfred Stedwell Lamborn, St. Mungo's College, Glasgow, and Middlesex Hospital; Alfred John Vernon Betts, Westminster Hospital; Arthur James Tayler and Percy Vosper, King's College, London; and Moung Pha Taw, Medical College, Calcutta, Rangoon General Hospital, and King's College, London.

Anatomy only.—Arthur James Bowman Adams, St. Thomas's Hospital and Cooke's School of Anatomy and Physiology.

Physiology only.—Major Byron Oliver, University College, London; Joseph Cater, King's College, London; John Herbert Yearsley, St. Thomas's Hospital; and Arthur Henry MacNeill Mitchell, St. Mary's Hospital.

Eight gentlemen were referred in both subjects, four in anatomy only, and one in physiology only.

Saturday, April 4th—:

Anatomy and Physiology.—Frank Douglas Turner, Robert Macpherson Barron, and Graham Scales Simpson, Guy's Hospital; Ernest Blair Dowsett, King's College, London, and Guy's Hospital; Alfred Ernest Softly, Hubert Calvert, Harold Samuel Libby, and Arthur Bevan, St. Thomas's Hospital; William Howard Unwin and Peter Lewis Daniel, Charing-cross Hospital; Quirino Bonifacio de Freitas, King's College, London; William Ernest George Maltby, and Robert Edmond Heighes Woodforde, St. Bartholomew's Hospital; Ernest Alsager Parsons, Mason College, Birmingham, and Westminster Hospital; Lewis Cook, and Edward John Budd-Budd, Westminster Hospital; Edward Merry, and Thomas Chetwood, London Hospital; Philip Maynard Heath, University College, London; and Henry St. Arnand Agate and Octavius Robert Ennion, St. Mary's Hospital.

Fourteen gentlemen were referred in both subjects.

Monday, April 6th:—

Anatomy and Physiology.—James Herbert Sanders, Herbert Dean Pollard, and Alfred Frank Tredgold, London Hospital; Hugh Thomas Dyke Acland, James Goff, Henry Hugh Rose Clarke, Thomas Perrin, and Ernest Clarkson Bourdas, St. Thomas's Hospital; William Edward Peck, David Pratt Rockwood, John Edgar Simpson, University College, London; Thomas Walker Stanley Browne, Alec Denshaw, Juan José Rodil, and Alfred Reid, Guy's Hospital; Charles Dudley Bishop, Charing-cross Hospital; William Halliburton McMullin, Alexander Brown, King's College, London; Walter Seymour Danks, Harold Sebert Thomas, and John Abernethy Willett, St. Bartholomew's Hospital; Charles Thomas Baxter, Middlesex Hospital; and Arthur Solomon Morley, St. George's Hospital.

Thirteen gentlemen were referred in both subjects.

Tuesday, April 7th:—

Anatomy and Physiology.—William Thomas Hillier, Middlesex Hospital; James Sherren, London Hospital; and John Frederick Paul and Henry George Drake-Brockman, St. George's Hospital.

Anatomy only.—Charles Augustus Scott, Charing-cross Hospital; Stephen Joseph Welch, London Hospital and Cooke's School of Anatomy and Physiology; William Moore Bell Sparkes, King's College, London; and Thomas Howard Body and George Minter Brown, Guy's Hospital.

Physiology only.—Benjamin Isaac, Guy's Hospital.

One gentleman was referred in both subjects, two in anatomy only, and two in physiology only.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates passed in the undermentioned subjects at the Primary Examination held on March 31st and April 1st and 2nd:—

Anatomy and Physiology.—George Aldridge, London Hospital; Joseph Cater, King's College; John George Glasgow, St. Thomas's Hospital; Thomas Baker Haig, St. Bartholomew's Hospital; James Hughes Harrison, Sheffield; Henry Cadwaladr Jones, St. Mary's Hospital; William Robert Murison, Edinburgh; Frank Rowland, Birmingham; George Edward Henry Sargent, London Hospital; Reginald Storrs, Leonard Edgar Whitaker, Ernest Dixon Wortley, and Thomas Lancelot Wyndham, St. Bartholomew's Hospital.

Anatomy.—Edward Quaid Ambrose, London Hospital; Charles Harold Bennett, Edinburgh; Frederick Edward Bissell, Birmingham; Kristnalal Datta, Paris and Glasgow; Richard Frank Ellery, St. Bartholomew's Hospital; Charles Henry Farquharson, St. Mary's Hospital; Alexander Farrington, St. Bartholomew's Hospital; Reginald John de Gale Ferguson, University College Hospital; Percy Tranter Goodman, St. Thomas's Hospital; Stephen Joseph Welch, London Hospital.

Physiology.—Alfred Lewis Bartram, Cambridge University and Westminster Hospital; George Frederick Beacher, Sheffield; Oliver Charles Yonell Cartter, Charing-cross Hospital; George William Hennen Edgelow, London Hospital; Herbert Devas Everington, St. Bartholomew's Hospital; William Wood Forbes, Aberdeen; Samuel John Brookfield Fox, Sheffield; John George Gowlland, St. George's Hospital; Thomas Edward Holman, Guy's Hospital;

Robert Orford Jones, Guy's Hospital; Ernest Ward Lowry, St. Bartholomew's Hospital; Edward Alexander Le Maistre, London Hospital; Cyril Purdon, Belfast; James Herbert Rhodes, St. Bartholomew's Hospital; Charles Goldthorp Sugden, Cambridge and Leeds; Harry War Bennett Walling, Guy's Hospital; Harry Whittaker, Cambridge.

ROYAL COLLEGE OF SURGEONS IN IRELAND: SCHOOLS OF SURGERY: Class Prizes (Winter Session 1895–96).—Descriptive Anatomy: Junior, W. J. Trembath, first; J. S. P. Stewart, second. Senior, D. A. Fitzgerald, first; W. J. Anglim, second. Practical Anatomy (first year): Miss R. F. Lynn, first; F. G. Fitzgerald, second; (second year) G. W. Little, first; J. J. Huston, second; (third year) W. M. Falkner and D. Hadden (equal), first; P. H. Falkner, second. Physiology: W. Gavin, first; P. S. O., Reilly, second. Practice of Medicine: D. Hadden, first; F. J. Palmer, second. Surgery: F. A. Benson, first; W. H. May, second. Midwifery: S. G. Longworth, first; Miss L. F. S. Strangman, second. Theoretical Chemistry: C. B. Vance and S. L. Worthington (equal), first: J. S. P. Stewart, second. Pathology: F. J. Palmer, first; S. G. Longman, second. Physics: J. S. P. Stewart, first. The schools opened on Tuesday, April 7th, for the three months' courses of operative surgery, practical chemistry, practical pharmacy, public health, and forensic medicine, materia medica, practical histology, biology, and dissections.

FOREIGN UNIVERSITY INTELLIGENCE.—*Breslau:* Dr. J. Pfannenstiel has been promoted to an Extraordinary Professorship of Gynæcology.—*Lausanne:* Dr. L. Secretan has been appointed Extraordinary Professor of Otology and Laryngology.—*Leipzig:* Dr. Fredrich has been recognised as *privat docent* in Throat Diseases.—*Strassburg:* Dr. Forster, Professor of Hygiene in Amsterdam, has been offered a Professorship if he will migrate, but at present it is uncertain if he will do so.—*St. Petersburg (Military Medical Academy):* Dr. S. S. Bolkin has been appointed Professor of Infectious Diseases and Bacteriology; Dr. N. N. Zhukoff has been recognised as *privat-docent* in Mental and Nervous Diseases; also Dr. D. A. Kamenski as *privat-docent* in Pharmacology and the Science of Natural Mineral Waters.—*Vienna:* Dr. Hans von Hebra has been promoted to an Extraordinary Professorship of Dermatology.

FOOTBALL FATALITY.—On the 6th instant, during a match at Nuneaton between the Nuneaton Town Club and the Sutton team, from the Birmingham district, a player sustained injuries from which he died at the Nuneaton Hospital on Wednesday last.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST.—The annual meeting of the governors of the Royal Hospital for Diseases of the Chest, City-road, was held at the hospital on March 13th, the Lord Mayor presiding. The report showed that during 1895 there were 755 in-patients and 23,844 attendances of out-patients. The income for the year, exclusive of legacies, was £6020, and the total ordinary expenditure was about £7500. It had been found necessary to borrow £1000 from the bankers, and in addition there was the sum of about £1200 due to tradespeople.

ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the society, to be held at 22, Great George-street, Westminster, on Wednesday, the 15th inst., at 7.30 P.M., Mr. William Ellis, F.R.S., will read a paper on the Mean Amount of Cloud on each Day of the Year at the Royal Observatory, Greenwich, on the Average of the Fifty Years, 1841 to 1890; Mr. E. D. Fridlander will discuss Atmospheric Dust Observations from Various Parts of the World; and Major H. E. Rawson, R.E., will give an Analysis of the Greenwich Rainfall Records from 1879 to 1890, with Special Reference to the Declination of the Sun and Moon.

A MEETING of the Incorporated Society of Medical Officers of Health was held at 197, High Holborn on March 19th, when the secretary submitted the report of the council. In this report the council state that having had their attention called to the action of the Farnborough urban district council in advertising for tenders for the post of medical officer of health, they recommended that the society should in the interests of public health record its strong disapproval of such methods of filling a professional appointment so closely associated with national interests. The report was adopted, and a resolution registering emphatic disapproval of the action of the Farnborough urban district council was carried.

DR. F. SIDNEY GRAMSHAW, whose name appeared in THE LANCET of April 4th as having obtained the degree of M.D. St. Andrew's, passed the necessary examination in 1895, but was compelled to wait until the recent graduation ceremony for his "capping."

A QUARTERLY general meeting of the Society for the Study of Inebriety was held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on April 9th. Mr. A. E. T. Longhurst read a paper on the Relation of Alcoholic Stimulants to True Physiological Health and their value in the Treatment of Disease.

MENTALLY DEFECTIVE CHILDREN.—At the last meeting of the London branch of the British Association for Child Study Dr. W. S. Colman gave a short but very interesting account of the various classes into which cases of marked mental defect are usually grouped. He insisted strongly upon the necessity of early detection by parents and teachers of any defects of the sense organs.

A CENTRAL HOSPITAL BOARD FOR LONDON.—A special meeting of the council of the Charity Organisation Society is to be held at the Royal United Service Institution, Whitehall, S.W., on Monday next, April 13th, 1896, at 4.30 P.M., to discuss the subject of a central hospital board for London. The Earl of Stamford (the chairman of the council) will preside. We have dealt with the position in a leading article this week.

PRESENTATION.—On Easter Day, April 5th, Mr. Wilson, the medical superintendent of the Croydon Infirmary, Thornton Heath, was presented with a handsome testimonial in the shape of a gold watch with suitable inscription from the united staff of past and present officers at the infirmary as a small token of their respect and esteem. The presentation was made by Nurse Bell, the oldest resident nurse, and accompanied by a kindly letter of greeting from the contributors.

LONDON TEMPERANCE HOSPITAL.—The annual meeting of the governors of the London Temperance Hospital, Hampstead-road, was held at the hospital on the afternoon of March 19th. The report showed that from the foundation of the hospital in 1873 there had been 11,652 in-patients, with 766 deaths, or only a fraction over 6 per cent. During 1895 there were 1066 in-patients, with 99 deaths, equal to a death-rate of 9·3 per cent., and in the same period there were 5842 new out-patients. The same evening there was another meeting, at which the secretary read a report by Sir B. W. Richardson, stating that his belief in the uselessness of alcohol as a medicine was unabated.

THE DIFFUSION OF SMALL-POX.—The information from Gloucester is not reassuring, the new cases last week being said to have occurred at the maintained rate of 30 per diem. Up to Wednesday of last week, from the previous Friday, there had been 176 fresh attacks, 24 deaths, and only 11 discharges from the hospital. Taking the weeks ended since the second week of February the cases have been 61, 50, 79, 130, 155, 154, and, last week, some 200, making a total in the seven weeks of about 830 persons attacked by small-pox in a population of 40,000 people. Here, then, we find within the space of two months as high a rate as 20 per 1000 of the whole city suffering from a preventable disease. The data to the 26th of March showed that of the 693 cases which had occurred 118 had proved fatal, and that of the 365 hospital-treated cases 90 had proved fatal, no fewer than 74 of these latter having occurred in unvaccinated individuals. Not only so, but there had been but one revaccinated patient received into hospital, and the sufferer had been revaccinated fourteen years ago and caught the infection whilst nursing a private patient. With regard to the hospital cases we learn from Dr. Bond that 158 were of once-vaccinated persons, chiefly adults, and of these 11, or 7 per cent., proved fatal; that 207 were of unvaccinated persons, mostly children, with 70 deaths, or 33·8 per cent. Not a single death in a vaccinated person had occurred in an individual under the age of twenty-four years. The great majority of the unvaccinated children recovering from their attack will be disfigured through life, and some will be blind. Of the vaccinated 2, and of the unvaccinated 179, cases were of children under ten years of age; 42 and 14 respectively under twenty years of age, and 114 and 14 respectively over that age.

Some 15,000 to 20,000 vaccinations and revaccinations have been already performed in the city—that is, about one-half of the population have yielded to the evidence of facts without the guardians having taken any positive action. The guardians have appointed assistant vaccination officers to make a house-to-house visitation in the interests of all unprotected children, and their task should, under present circumstances, prove an easy one, for even the opponents of vaccination have in many cases willingly submitted themselves to the operation. It is true that as recently as April 1st *(absit omen)* the anti-vaccinators held a demonstration in the Royal Albert Theatre, Gloucester, but popular feeling is no longer with them, for the trade of the city is feeling terribly the strain of the excommunication of the town. An additional case of small-pox is reported from Camborne. Further cases at Cardiff have been removed to hospital. Two deaths are reported from Newport. A second case has been discovered at Birmingham on a canal boat, the victim, since dead, being an unvaccinated child coming from Gloucester. At Cheltenham the town council have placarded the town with posters showing the arrangements made with a large number of medical men for securing gratuitous vaccination and revaccination; and in the Stroud Union exceptional arrangements have also been made for enabling the populace to be vaccinated at numerous places and during a long range of hours. Another employé of the urban district council at Bridgend has contracted the disease. The occurrence of several cases at Brecknock in the last few days of March led the district council to rent an empty house in the town for the isolation of the patients, but the demonstrations of the mob were such as to lead the mayor to publicly state that a house should be secured for the purpose outside the town and away from dwellings. These repeated declarations of the people in different places against the use of tenements in populated parts for the care of small-pox patients denote the growing tendency of the masses to relegate the disease to rural sites for hospital purposes. Many cases have arisen lately in Aberdeenshire, especially in the neighbourhood of Cluny, the original case having apparently been traced to importation from South Shields. Much free vaccination is being performed in the county in consequence. In Dublin small-pox is not quite extinct, the past month having furnished 7 cases to the hospital.

Parliamentary Intelligence.

CURRENT NOTES.

Coal Mines Regulation.

THE Government have made it known that they will very shortly introduce a Coal Mines Regulation Bill, having as its main object the prevention of accidents and the consequent loss of life.

Petroleum Accidents.

The Select Committee of the House of Commons on the sale, storage, and conveyance of petroleum, and on accidents occurring with paraffin lamps, has appointed as its chairman Mr. Mundella, and has begun the examination of witnesses. It devoted a whole sitting to the examination of Mr. A. Spencer of the Public Control Department of the London County Council, who gave interesting evidence as to the risks run in London both in connexion with lamps and with the storage of petroleum, and who recommended the strengthening of the Petroleum Acts in the general interests of the public.

HOUSE OF COMMONS.

TUESDAY, MARCH 31ST.

Public Health Certificates.

Mr. Knowles, on behalf of Mr. Rentoul, asked whether the Local Government Board had recognised the certificate of the Sanitary Institute as a certificate for a sanitary inspector under the Public Health (London) Act, 1891, Section 108 (2) *(d)*; whether any other public health bodies had applied for recognition of their certificates, and, if so, their names; whether such approval had been given, and, if not, the reasons for refusal; and whether the committee appointed by the Local Government Board three years since for drawing up a scheme for establishing one examining board in England for the examination of sanitary inspectors did draw up such a scheme, and, if so, when would effect be given to it.—Mr. T. W. Russell, in reply, said the Local Government Board have approved, until they otherwise direct, of the Sanitary Institute as a body to grant certificates for the purposes of the section referred to in the question. The British Institute of Public Health applied for a similar approval, and the Board had reason to believe that application of a like character would be made by other bodies. The application of the British Institute of Public Health was not complied with, as the Board thought it desirable that a joint board should be formed consisting of representatives of various examinations and grant certificates for the purposes of the section. A committee was appointed in 1894 to draw up a scheme for establishing a joint examination board, and they have framed a scheme accordingly. The scheme adopted contemplates that the examination board should be incorporated under the Companies Act, 1862, and application was accordingly made to the Board of Trade. The Board are communicating with the Board of Trade on the subject.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ANDREWS, H. A., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the Hull Infirmary.

BENNETT, C. J., M.R.C.S., has been appointed Medical Officer of Health by the Dixley and Hayfield Rural District Councils respectively.

BERRY, H. P., M.B. Lond., M.R.C.S., has been reappointed Medical Officer by the Grantham Town Council.

BERRY, WILLIAM, L.R.C.P., L.R.C.S. Edin., F.R.C.S. Irel., M.R.C.S., D.P.H. Glasg., has been appointed Medical Officer of Health by the Hanley Urban District Council.

BLACKMORE, B., L.R.C.P., L.M. Irel., has been reappointed Medical Officer by the Tyldesley District Council.

CHRISTIE, MARGARET M. T., M.B. Lond., has been appointed Junior Medical Officer for the Greenwich Workhouse.

COGHLAN, T., L.R.C.S., L.M. Irel., has been appointed Medical Officer for the Kilmacow Dispensary.

CRINION, L. A. J., M.B., B.Ch. Irel., has been appointed Medical Officer for the Rathmore Dispensary District, vice Coady.

DARROLL, W. B., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer for the Brampton Brian Sanitary District of the Knighton Union.

FISHER, V. H., M.B. Dub., L.R.C.S., L.M.R.C.P. Irel., has been reappointed Medical Officer by the Howden Rural District Council.

GALLOWAY, A. R., M.B., C.M. Aberd., has been appointed for the combined office of Assistant Anæsthetist and Assistant Medical Electrician to the Aberdeen Royal Infirmary.

GIBBS, CHARLES, F.R.C.S., has been appointed Assistant Surgeon to Charing-cross Hospital, vice the late Mr. Archie T. Collum.

GOODFELLOW, J. A., M.B., C.M. Glasg., has been reappointed Medical Officer of Health for Brampton.

HARPER, CHARLES, L.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer of Health for Bath.

HAWKINS, E., M.D., C.M. Edin., has been appointed Medical Officer of Health, Sunderland.

HOPTON, RALPH, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Hospital for Women and Children at Leeds.

KEMPE, C. M., M.R.C.S., has been appointed, *pro tem.*, Medical Officer of the Workhouse, Steyning Union, vice T. Fuller, resigned.

LE FANU, H. G. P., L.R.C.P., L.R.C.S. Irel., has been appointed Honorary Medical Officer to the Derbyshire Hospital for Sick Children, vice F. E. Taylor, resigned.

MACKAY, J., M.D. Aberd., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer to the Poorhouse, Logierait.

MEAD, G. B. O., L.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer by the Newmarket Urban District Council.

MIVART, F. ST. GEORGE, M.D. Louvain, L.R.C.P., F.R.C.S. Edin., M.R.C.S., has been appointed Medical Inspector by the Local Government Board.

MONTGOMERY, R. J., M.A., M.B., T.C.D., F.R.C.S.I., has been appointed Ophthalmic Surgeon to the Drumcondra Hospital (Whitworth), Dublin.

NETTLE, WILLIAM, M.R.C.S., has been reappointed Medical Officer of Health for the Liskeard Rural and Urban Sanitary Districts.

PARSONS, F. J. C., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer by the Bridgwater District Council.

ROBERTS, LLEWELLYN W., M.B. Melb., &c., has been appointed House Surgeon to the Victoria Hospital, Folkestone.

SANKEY, J. IVOR, M.R.C.S., L.R.C.P., L.S.A., has been appointed Medical Officer and Public Vaccinator for the Sixth (Brenchley) District of the Tonbridge Union, vice P. W. Streatfield, resigned.

SHEARER, R. P., M.B., C.M. Glasg., has been appointed Medical Officer of Health for the Gotham Sanitary District of the Basford Union.

SOUTHEY, A. J., M.R.C.S., has been reappointed Medical Officer of Health by the Eton Urban District Council.

WALKER, J. D., M.B., M.S. Aberd., has been appointed Junior Assistant Medical Officer to the Cornwall County Asylum.

WEBBER, W. W., L.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer of Health by the Crewkerne Urban District Council.

WELLS, S. RUSSELL, M.D., B.Sc. Lond., M.R.C.P., has been appointed Medical Registrar to St. George's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—Resident Medical Officer. Salary £80 per annum, with board and residence.

HALIFAX INFIRMARY AND DISPENSARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL, Hastings.—Honorary Ophthalmic Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury.—Surgical Registrar, for one year, an honorarium of £40 being voted at the expiration of that term.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Honorarium £21, and board, residence at the infirmary, and washing provided.

LIVERPOOL NORTHERN HOSPITAL.—Assistant House Surgeon. Salary, £70 per annum, with residence and maintenance in the hospital.

OWENS COLLEGE, Manchester.—A Senior and a Junior Demonstrator in Physiology.

OWENS COLLEGE, Manchester.—Junior Demonstrator in Anatomy.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, London.—Examiners.

SHEFFIELD ROYAL HOSPITAL.—Junior Assistant House Surgeon, unmarried. Salary 60 guineas per annum, with board (exclusive of wine and beer) and lodging.

SUSSEX COUNTY HOSPITAL, Brighton.—Fourth Resident Medical Officer, unmarried. Salary £30 per annum, with board, washing, and residence in the Hospital.

VICTORIA HOSPITAL, Burnley.—House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

WREXHAM INFIRMARY AND DISPENSARY.—House Surgeon. Salary £80 per annum, with furnished rooms, gas, coal, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

CRAMPTON.—On March 31st, at Bond-street, W.C., the wife of T. Hobbs Crampton, L.R.C.P. Irel., L.R.C.S. Irel., of a daughter.

CROPPER.—On April 1st, at Syston House, Boscombe, Bournemouth, the wife of John Cropper, M.A., M.B., B.C. Cantab., of a daughter.

ELLERTON.—On March 31st, at Priory-terrace, Leamington, the wife of J. F. Heise Ellerton, M.D. Brux., of a daughter.

FRASER.—On April 3rd, at Burton-road, Carlton, Nottingham, the wife of Alexander Fraser, M.B., C.M. Edin., of a daughter.

LANGDON-DOWN.—On April 6th, at Harley-street, W., the wife of Reginald L. Langdon-Down, M.B., M.R.C.P., of a daughter.

MACGREGOR.—On March 31st, at Hillside, Clayton West, near Huddersfield, the wife of Duncan Alastair MacGregor, M.B. Univ. Edin., of a son.

MARTIN.—On April 3rd, at Southwick-place, Hyde-park, W., the wife of Henry C. Martin, M.D. Edin., of a son.

SANDFORD-SMITH.—On April 5th, at Eltham, Kent, the wife of H. Sandford-Smith, M.R.C.S., L.S.A., of a daughter.

SKYRME.—On March 27th, at Windsor-place, Cardiff, the wife of Hy. E. Skyrme, M.R.C.S., L.R.C.P. Lond., of a daughter.

MARRIAGES.

DUNCAN—WIGHTMAN.—On March 18th, at St. George's, Hanover-square, Duncan Duncan, M.R.C.S. Eng., of Eccleston-street, S.W., to Caroline Agnes, eldest daughter of the late George Wightman, of Clapham.

FINCHAM—GIBBON.—On April 8th, at St. Mary's, Hornsey-rise, N., Ernest C. Fincham, M.R.C.S. Eng., L.R.C.P. Lond., only son of James Fincham, M.Inst.C.E., of Hobart, Tasmania, to Blanche, youngest daughter of the late Richard Gibbon, of Shanghai.

LLOYD—WISKAR.—On April 7th, at the parish church, St. Pancras, Samuel Lloyd, M.D. St. And., of High-street, St. Giles's, to Emma, widow of the late Walter C. Wiskar, of Whitfield-street, Fitzroy-square.

MACKAY—MCHARDY.—On April 8th, at the Cathedral Church of St. Mary, Edinburgh, by the Right Reverend the Bishop of Edinburgh, assisted by the Reverend Irvine K. Anderson, Rector of Tavy St. Mary, Devon, uncle of the bride, George Mackay, M.D., F.R.C.S.E., eldest son of Deputy-Surgeon-General Geo. Mackay, M.D., to Elise Marjory, younger daughter of Lieutenant-Colonel Alex. Burness McHardy, R.E., one of H.M. Prison Commissioners for Scotland.

DEATHS.

ATTER.—On April 1st, at Lillie-road, West Brompton, London, Henry Herbert Atter, Surgeon, aged 33.

BRYCE.—On March 24th, at sea, on s.s. *Inchanga*, James Bryce, M.D. Aberd., late of Puckeridge, Herts, aged 33 years.

BURFORD.—On April 1st, at Greville-road, Kilburn, N.W., Henry Thomas Buttanshaw Burford, M.R.C.S., aged 90.

GREGG.—On March 31st, at Camberwell, the Right Reverend Thomas Huband Gregg, D.D. and M.D. Dubl., Bishop of Verulam, aged 56 years.

KANE.—On Easter Sunday, at Bishopsteignton, Joseph George Auriol Kane, M.D. Dubl., of Exmouth, aged 30.

SARGENT.—On March 27th, at Nice, Arthur Francis Sargent, Surgeon-Major 3rd Bombay Light Infantry, youngest son of the late Rev. John Paine Sargent, Vicar of Cauldon, Staffordshire, aged 43 years.

SMITH.—On April 1st, at Hammersmith, Wilberforce Smith, M.D. Heidelberg, of Stratford-place, aged 51.

THOMAS.—On March 31st, at Mile End House, Llandovery, David Thomas, M.R.C.S., J.P., in his 82nd year.

THORNE.—On April 7th, at Cannes, Annette Maud, only daughter of William Bezly and Annette Mary Thorne, of 53, Upper Brook-street, London.

WELSH.—On April 7th, at Oakdene, Oak Hill-road, Surbiton, Francis Fawcett Welsh, F.R.C.S., aged 79.

WILSON.—On April 1st, at Piazza Madonna, Florence, William Wilson, M.D. Gottingen, F.R.C.S., in his 82nd year.

WREFORD.—On April 4th, at Osborne-road, Newcastle, John William Ernest, only child of John Wreford, M.R.C.S., L.R.C.P.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 9th, 1896.

Date		Barometer reduced to Sea Level and 32° F	Direction of Wind	Dry Bulb	Wet Bulb	Solar Radia in Vacuo	Maximum Temp. Shade	Min. Temp	Rainfall.	Remarks at 9.30 A.M.
April	3	30·15	N.E.	46	42	59	50	41	...	Overcast
,,	4	30 20	S.W.	42	41	66	54	39	...	Hazy
,,	5	30 07	N.E.	50	46	62	56	41	0·11	Raining
,,	6	30 20	N	52	49	96	59	48	0·01	Cloudy
,,	7	30 24	N.W.	53	50	97	63	50	...	Cloudy
,,	8	30 26	N.	56	52	98	66	52	...	Cloudy
,,	9	30 24	N.W.	55	49	82	53	52	...	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.).

TUESDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (2 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (15th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross, (3 P.M.), St Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.).

THURSDAY (16th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Great Northern Central (Gynæcological, 2.30 P.M.).

FRIDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.) Gt. Northern Central (2.30 P.M.).

SATURDAY (18th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (13th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-square, W.C.).—8 P.M. Papers:—Mr. A. Marmaduke Sheild: A Case of Aneurysm by Anastomosis of the Vessels of the Hard Palate, with Hæmorrhage into the Mouth, treated by Excision of a portion of the Jaw.—Mr. Storer Bennett: Report on a Case of Re-united Fractured Human Tooth, with some remarks on the Healing of Wounds of the Dental Pulp.—Mr. C. Tomes: (1) Description of a very remarkable Formation of Secondary Dentine after Fracture of a Tooth; (2) Further Notes on Amalgams.

SOCIETY OF ARTS.—8 P.M. Professor H. A. Miers: Precious Stones. (Cantor Lecture.)

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Cases:—Dr. E. Cautley: Congenital Distensile Tumour of the Neck.—Dr. de Havilland Hall: (1) Osteitis Deformans; (2) Great Enlargement of Leg; (3) Jaundice (? Hydatid of Liver).—Mr. W. H. Battle: (1) Lateral Spinal Meningocele; (2) The Result of Operation in a Case of Spontaneous Dislocation of the Patella.—Dr. Gilbart Smith: Carcinoma of Larynx.—Mr. Clinton Dent: (1) Hairy Mole of Face; (2) Tumour of Abdominal Wall.—Mr. G. R. Turner: Tumour of Neck.

TUESDAY (14th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—Surgeon-Captain M. L. Hughes: Note on the Endemic Fever of the Mediterranean.—Mr. R. Barwell: On Spontaneous Dislocation of the Hip, with some remarks on a Class of Cases often mistaken for Rheumatism.

WEDNESDAY (15th).—LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Adjourned Discussion on Foreign Bodies in the Upper Air and Food Passages, introduced by Mr. Charters Symonds at the February meeting.

ROYAL METEOROLOGICAL SOCIETY (22, Gt. George-st., Westminster).—7.30 P.M. Papers:—Mr. W. Ellis: Mean Amount of Cloud on each day of the year at the Royal Observatory, Greenwich, on the average of the fifty years 1841 to 1890.—Major H. E. Rawson: An Analysis of the Greenwich Rainfall Records from 1879 to 1890, with special reference to the Declination of the Sun and Moon. Mr. E. D. Fridlander will open a Discussion on Atmospheric Dust Observations from various parts of the world.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (Limmer's Hotel, Conduit-street, W.).—8 P.M. Dr. F. Fox (Strathpeffer Spa): The Varieties and Treatment of Articular Gout. Discussion on Necessity of Increased Travelling Facilities to the British Health Resorts.

ROYAL MICROSCOPICAL SOCIETY (20, Hanover-sq., W.).—8 P.M. Meeting.

THURSDAY (16th).—HARVEIAN SOCIETY (Stafford Rooms, Pitshorne-street, Edgware-road, W.).—8.30 P.M. Papers:—Dr. W. Hill: Prognosis in Chronic Non-suppurative Catarrh of the Middle Ear.—Mr. R. Johnson: Some Unusual Cases of Swelling of the Parotid Gland. Mr. Dodgson: A Demonstration of the Process of Photography by means of Roentgen's Rays.

FRIDAY (17th).—BRITISH LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL ASSOCIATION (11, Chandos-st., Cavendish-sq., W.).—3 P.M. Cases by the President (Dr. Stoker), Dr. Whistler, Dr. Macnaughton Jones and Mr. Lake. Microscopic Sections by Dr. Pegler. Discussion on the Symptoms and Treatment of Disease of the Attic, introduced by Dr. A. Bronner (Bradford) and Dr. D. Grant. Dr. J. Macintyre (Glasgow): Demonstration of the Roentgen Ray Photography as applied to Laryngology.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (13th).—ROYAL INSTITUTION.—5 P.M. General Monthly Meeting.

TUESDAY (14th).—ROYAL INSTITUTION.—3 P.M. Professor James Sully: Child-Study and Education.

GRESHAM COLLEGE.—Dr. E. Symes Thompson: The Latency of Disease.

THURSDAY (16th).—ROYAL INSTITUTION.—3 P.M. Professor Dewar: Recent Chemical Progress.

FRIDAY (17th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL.—4 P.M. Dr. Dundas Grant: The Diagnosis and Treatment of Deafness occasioned by the residue of Suppurative Inflammation of the Middle Ear.

ROYAL INSTITUTION.—9 P.M. M. G. Lippmann: Colour Photography.

SATURDAY (18th).—ROYAL INSTITUTION.—3 P.M. Professor W. B. Richmond: The Vault of the Sixtine Chapel.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index for the second half-yearly volume for 1895 was given in the issue of Dec. 28th. The practice of supplying loose copies has been discontinued, the Index having been placed in the centre of the journal, whence it can easily be detached, and placed either at the beginning or at the end of the volume.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1895 are now ready. Bound in cloth, gilt lettered, price 18*s*.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s*.; by post, 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

CARDIAC MURMURS AND FRICTIONS HEARD FROM A DISTANCE.

To the Editors of THE LANCET.

SIRS,—The interesting case reported in THE LANCET of April 4th, of a child with a mitral murmur heard from a distance, is by no means unique, as a reference to Section 780: 3 (1890 Edition) of the "Medical Digest" will prove. Dr. Osler in 1880 described a somewhat similar case, and incidentally alluded to several others that had been reported. In Section 758: 5 (Appendix) some remarkable cases of pericardial frictions heard from a distance will be found recorded.

I am, Sirs, yours truly,

South Hampstead, April 4th, 1896. RICHARD NEALE, M.D. Lond.

"THE POISON OF THE PRIMULA."

To the Editors of THE LANCET.

SIRS,—In connexion with the discussion on this subject it may be of interest to note that the Rhus toxicodendron or poison ivy produces when handled an acute dermatitis the inflammation of which is erysipelatous in character, rapidly spreading from the parts first affected all over the body and involving even the mucous membranes. The first case of this description which I saw was under the care of Professor T. R. Fraser in the Royal Infirmary at Edinburgh. A still more curious circumstance is that certain susceptible people are seized with acute eczema after touching the Japanese fancy boxes now so commonly sold in the shops, the explanation being that these boxes are varnished with a preparation made from a species of sumach.

I am, Sirs, yours truly,

Welbeck-street, W., April 6th, 1896. WILLIAM MURRELL.

To the Editors of THE LANCET.

SIRS,—In reply to your inquiry as to the poisonous qualities of the primula, as far as I know the primula obconica is the only one that is known to have poisonous qualities. It seems only to affect a limited number of the persons who have been in contact with it. It causes swelling of the parts and a glossy redness, with intense burning, itching, and tingling, especially severe after the patient retires to rest. These symptoms often remain for two or three days, and after this the fingers seem to shrivel and desquamate. The irritation is most tiresome and depressing, and if continued long tells seriously upon the general health. The parts affected are, as might be expected, the hands and those parts which come into contact with them, more especially the face. The treatment which I have found of the greatest use is the application of the following lotion—zinci oxidi, ʒ iii.; calaminæ, ʒ iv.; glycerini plumbi subacetatis, ʒ iss.; liquor carbonis picis, ʒi. to ʒ ii.; spiritus, ʒi.; aquæ sambuci ad ℥ viii.—or an ointment of cocaine. A solution of carbolic acid is also said to be very efficacious. As the primula obconica is now very extensively cultivated in greenhouses and seeing that it remains in flower all the year round, its effects ought to be better known to the profession than they have hitherto been, as the following case will show. A woman, fifty-two years of age, was brought under my notice suffering from repeated and severe inflammation and swelling of the fingers and palms of the hands, also occasionally of the eyelids and ears, rendering her nights sleepless from the pain and irritation. This state of affairs had continued for such a length of time that her general health began to suffer and she was becoming melancholy and desponding. She had consulted several medical men who had pronounced the case to be a recurrent urticaria. She had been put under a most rigid diet for more than twelve months, but without any benefit. Local sedatives had relieved the symptoms for an hour or two at a time, but without permanent good. Internal remedies of various kinds were adopted with no better results. But it had always been noticed that when she was away from home she at once improved and for a time entirely lost all the symptoms, but on her return home she began to suffer as badly as ever. Last summer she went away and, as usual, the symptoms disappeared. At the end of about a month her husband sent her a basket of flowers which had been grown in the conservatory at home, and within twenty-four hours the old trouble began. The writer of these notes calling and seeing the primula obconica on the table and knowing its poisonous effects at once solved the problem, and the patient has had no return of the trouble since that time.—I am, Sirs, yours faithfully,

Blackpool, March 31st, 1896. F. W. A. STOTT.

To the Editors of THE LANCET.

SIRS,—In reference to your note on the primula obconica it appears to be without doubt that the plant secretes a virulent poison, and that the primula sinensis also secretes a poison, presumably the same only less virulent, but considering the number of plants in cultivation the percentage of persons susceptible to the poison must be very small. A difficulty in bringing home the charge to the primula is that the effect does not immediately follow the cause, consequently many cases escape recognition. Last winter I had several plants of the obconica, and I suffered from numerous attacks of the eruption until I suspected the cause, and this subsequently I confirmed by handling when my skin was healthy. In about eight hours' time the first symptom appeared—viz., itching between the fingers and on the forehead—and soon an erythematous eruption appeared, which rapidly spread over the whole face, the palms, and up the flexor surfaces of the arms. The rash is slightly raised, but the edges are not well defined. The irritation is intense. Bullæ formed between the fingers and on the forehead. The duration of the attack was three days, the rash disappearing and the irritation gradually abating; desquamation in large flakes followed. I have seen only three cases of poisoning by the primula obconica, but have heard of several others. One of these was a market gardener who potted yearly several scores of this plant, but who never suffered any ill-effect until he handled them with a scratched hand; the rash then appeared on one arm only. A few weeks ago I handled some leaves of the primula sinensis, this was followed by a mild erythematous attack with itching, which, however, only lasted a few hours; and almost the same time I saw a patient with what I diagnosed as "primula erythema." He had been handling the primula sinensis the day before the eruption appeared.

I am, Sirs, yours faithfully,

Andover, April 6th, 1896. J. F. GILLETT, M.B.

THE APPOINTMENT OF MEDICAL OFFICERS OF HEALTH: TWO QUESTIONS.

To the Editors of THE LANCET.

SIRS,—Will you kindly reply through the medium of THE LANCET to the following queries: (*a*) Are the duties of a medical officer of health set out in pamphlet form by the Local Government Board? If so, where can I apply for a cheap copy? (*b*) I am about to take up my residence in a "union district" where there is no resident medical man, and the medical officer for the poor lives in another district and is the holder of three or four such appointments outside his residential district. Now, I am told that on taking up my residence in this district I, being the only resident medical man therein, can "demand" (that is the word my informant used) the post of medical officer for the poor at the hands of the guardians for the district in which I reside, and that it will be given to me in one month after my application. Is this correct? Thanking you in anticipation, I am, Sirs, yours faithfully,

April 4th, 1896. M.O.H.

*** (*a*) Yes; we send our correspondent an "order" to rural sanitary authorities issued by the Local Government Board, and procurable from Messrs. Eyre and Spottiswoode. (*b*) He should apply to the guardians to be appointed when the year of office of the present holder terminates, and should inform this Board he has done so because he is resident in the district. He will probably find the appointment is annual only, on account of non-residence of the present holder. He cannot demand the appointment, but residence in the district is an extremely strong claim in the view of the Local Government Board to the office.—ED. L.

Young Student will find his first question answered as definitely as it can be by a leading article in our issue of Aug. 17th, 1895. He will be right to place M.D. after his name; he should certainly affix also the letters designating the university where he obtained the degree. With regard to his second question, we recommend him to address the secretaries, Dr. Albert Mills, 30, Rue du Pépin, Brussels, or Mr. Walter Reeve, 23, Victoria-street, Westminster.

THE QUESTION OF MEDICAL PRIVILEGE IN MICHIGAN.

A JUDGE has decided at Battle Creek, Michigan, against professional secrets. A physician must testify in regard to the ailments of his patients. Judges must either go further or not so far. They must define the circumstances in which secrets are to be disclosed, otherwise even judges may lose authority with the public.

CLUB MEMBERS AS PRIVATE PATIENTS.

To the Editors of THE LANCET.

SIRS,—Now that club practice is such a burning question I should like your opinion on the following case, which must be only one out of many in the country, though I have never seen the point raised.

A fairly well-to-do tradesman, who is a member of the Order of ———, came to me. He said he knew the payment by the club was too small, and that if I would do my best he would pay me for my attendance. I replied that he need not imagine that he would be better looked after by that arrangement as I tried to do my duty to club and private patients alike, but that I quite agreed that a man in his position ought not to take advantage of the club and that I would accept his offer on that ground. I made the note in my day-book, "Is in the ——— Club, but wishes to pay," and afterwards mentioned the matter to my assistant. At the usual time I sent in my account and was met by the threat to bring the matter before the club for having tried to charge a member for attendance. I consulted some of the officials and found that my patient had been to the lodge, who declined to interfere. They assured me that the club would not take part against me as they regarded the matter as a private affair between us. Now what are my rights? Am I justified in making such an arrangement with a member? If so, can he legally be made to abide by it? Is the note in my day-book of any value as evidence?

I am, Sirs, yours faithfully,

March 23rd, 1896. CLUB DOCTOR.

*** The point raised by our correspondent is very interesting but purely legal. The action of the club is to its credit, and so was the first action of the patient, who doubtless knew that he was not doing right in taking medical service from the club medical officer on club terms. He acted very unworthily of his better moments when he fell back on his club rights and tried to move the club to legal action against the medical officer. We are very doubtful of the legal power of our correspondent to enforce other payment than the club terms require. The patient has the principle of contract on his side. Had he paid cheerfully an honorarium the matter would have been different. Nevertheless, the case is very valuable as showing the injustice of the club system.—ED. L.

Mr. Walter J. Bell.—We cannot break through our rule of never giving medical or surgical advice.

Mr. F. M. Beaumont is thanked for his interesting extracts from the *Weekly Entertainer*.

H. G. D.—The question is not simple of answer. We will give it our attention.

"ADVERTISING DENTISTS IN KENSINGTON."

To the Editors of THE LANCET.

SIRS,—I most emphatically deny having any knowledge whatever of the paragraph respecting myself you reproduce in THE LANCET of April 4th from *Society*, and I am in no way responsible for its appearance in that paper. I consider your heading "Advertising Dentists" most offensive and unjust to one who has never in his life advertised dentistry. I am now waiting for the advice of my solicitor as to his view of that question. With regard to your reference to the Irish College of Surgeons, that authority—which, after all, is the only one primarily concerned in this matter—is quite capable of guarding its own interests. I am, Sirs, yours faithfully,

Lancaster-gate, W., April 7th, 1896. W. CADWALADR JONES.

*** The fact remains that Mr. Cadwaladr Jones's dentistry has been advertised. We never said that he was responsible for this. What we did say was that it was difficult to acquit him of all responsibility inasmuch as the offending paragraph that we quoted was not the only one of its sort that had appeared. We are glad to print his disclaimer of all knowledge of the paragraph, and recommend him to ask the editor of *Society* to withhold similar attentions for the future.—ED. L.

LEGAL RECOVERY OF MEDICAL FEES.

A COURT of law in the United States of America has decided in favour of Dr. A. C. Bernays in his action to recover $5000 (£1000) for the trephining of a wealthy lady. The learned judge remarked that the plaintiff gained his case not merely because the defendant's circumstances enabled her to pay so large a fee without serious inconvenience, but also because the operation of itself was well worth the sum charged. Our contemporary, the *American Journal of Surgery and Gynæcology*, in recording the case adds: "Large retainers to lawyers go unquestioned; that is a matter of saving of dollars and cents. But when a surgeon demands a fairly reasonable sum—say, $3000 to $5000—for an operation which saved a life the lawyers and the general public hold up their hands in horror and cry 'Exorbitant!' The precedent created in this case will doubtless lead to the establishment of higher fees than those hitherto sustained in our courts—a consummation devoutly to be wished."

THE NEW PHOTOGRAPHY.

WE have received from the Electric Photo-Printing Co., Short Hill, Nottingham, a book of photographs illustrating a lecture on the new photography delivered at University College, Nottingham, by Professor Heaton, M.A. The photographs, which were taken by Mr. A. H. Simpson, show a living boy's hand (aged ten) after an exposure of two and a half minutes, the hand of a living woman containing a needle, and other illustrations of a like nature. In the photograph of a man's foot, taken with the boot on (exposure ten minutes), the bones and articulations are distinctly seen, and the skeletal framework of a mouse, a rat, and a frog can be traced in other pictures with more or less distinctness. The published price of the book is 1s. 6d.

ERRATUM.—By an obvious slip of the pen in our report of the trial of Kitson *v.* Playfair on page 961 of our last issue the name of Dr. Williams (line fifty-seven) was substituted for that of Dr. Playfair in the address of Sir Frank Lockwood to the jury. The first question submitted to the jury should read, "Were the words uttered as alleged?"

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Sheffield Independent, Norfolk Chronicle, Kingston News, Birmingham Post, Devon Gazette, Manchester Guardian, Northern Telegraph, Ayrshire Post, Times of India, Lancashire Express, Blackburn Times, Scarborough Evening News, Worcester Echo, Pioneer Mail, Architect, Eastern Morning News, Journal des Débats (Paris), Western Daily Press, Scotsman, Builder, Dundee Advertiser, Midland Counties Express, Durham Chronicle, Southport Visitor, Bradford Observer, Somerset County Herald, Hereford Times, Keene's Bath Journal, Yorkshire Post, Bristol Mercury, Leicester Post, Glasgow Herald, Irish Times, The Speaker, Newcastle Journal, Rochester Journal, Grays Standard, Cambridge Express, Bedfordshire Standard, Liverpool Daily Post, Leeds Mercury, Carnarvon Herald, City Press, Putney News, Newport Pagnell Gazette, Sporting Times, Sevenoaks Chronicle, Sanitary Record, Gloucestershire Chronicle, Reading Mercury, Hertfordshire Mercury, Weekly Free Press and Aberdeen Herald, Mining Journal, Surrey Advertiser, Local Government Chronicle, West Middlesex Standard, Local Government Journal, Le Moniteur (Paris), Le Temps (Paris), Levant Herald, Colchester Gazette, Bedfordshire Times, Ramsbottom Observer, Newbury Weekly News, Fife Herald, Lowestoft Standard, Carlisle Patriot, Sussex Daily News, &c., &c.*

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